# The Journal of the American Medical Association

**Published under the Auspices of the Board of Trustees**

VOLUME L. CHICAGO, ILLINOIS, MARCH 14, 1908. NUMBER 11.


## Address

## THE CHEMICAL CONTROL OF THE BODY.*


ERNEST H. STARLING, M.D., F.R.S., F.R.C.P. (LOND.).
Todrell Professor of Physiology in the University of London.
LONDON, ENGLAND.


The desire of man for life, a necessary condition of existence in a healthy animal, has led him to search out by experiment the secret workings of his own body, with a view to acquiring by more perfect knowledge a measure of control over his own functions, comparable to that which he has already obtained over the forces of inanimate nature. In this way has been founded the science of medicine, the pursuit of which is the main object of the members of this society. Among the methods devised to this end, viz., the control of the functions of the body, must be classed the whole treatment of man from his youth upward; and a large part of the efforts of the medical man must coincide with those of the educationalist and the sanitarian in the endeavor to assure health by measures which affect, in the first place, the environment of man, his patient.

In the eyes of the general public, however, the office of the medical practitioner is often limited to the, for the present, less important rôle of administrator of medicines or drugs. Although this method has been the main weapon of the "medicine-man" in his fight against disease from the earliest ages, its scope is still but limited, and only within the most recent times has any attempt been made to place it on the basis of actual knowledge. The empirical character of the greater part of the treatment by drugs has proved a potent weapon in the hands of the satirist of the medical profession, and exception has often been taken to the employment of chemical remedial measures as being utterly opposed to the laws of Nature and the methods employed by her in the regulation of the body processes and the reaction of the organism against disease.

I wish to call your attention to a whole array of facts which demonstrate the unjustifiability of this attitude. As a result of recent investigations, we may assert that in the employment of drugs we are but imitating, although perhaps in a very imperfect manner, the method employed by Nature herself, and, indeed, that a large share in the wonderful co-ordination of the activities of different parts of the body, which determine their mutual cooperation for the common weal of the organism, is played by the production and circulation of chemical substances which are strictly analogous to the drugs employed during countless ages by mankind in the treatment of his diseases.

The idea that chemical factors must play an important part in the correlation of function between different parts of the body is not new, but I do not think its full significance was realized before the discovery of a very perfect and simple example of chemical co-ordination, viz., that, by means of which the activity of the pancreas is determined according to the nature or extent of processes occurring in the alimentary canal. I may, therefore, perhaps, be allowed to give you a brief account of this mechanism before treating of the numerous other instances of chemical correlation, many of which have been long known, although even now we can not pretend to a full comprehension of their significance in the body.

Among the many important discoveries of Pawlow and his school on the physiology of digestion, one of the most striking was the fact that the introduction of dilute acid into the duodenum and upper part of the small intestine provoked secretion of pancreatic juice, just as the introduction of acid into the mouth excites secretion of saliva. Thus, as fast as the acid chyme passes into the duodenum, its presence in the latter organ provokes a flow of alkaline pancreatic juice which will continue until the chyme is neutralized.

We know from the researches of von Mering, Cannon and others that so long as the contents of the duodenum are acid the pylorus remains closed, so that we have here a chain of processes determining a gradual emptying of the stomach into the duodenum and the addition to the chyme of just sufficient pancreatic juice to neutralize it and stop the action of the gastric juice and to bring about pancreatic digestion in full activity.

The "acid reflex" from duodenum to pancreas was ascribed at first by Pawlow to the intervention of a reflex arc of which the vagus was the efferent nerve. His pupil, Popielski, almost simultaneously with Wertheimer of Lille, showed that the "reflex" can be brought about after severance of all connection between the alimentary canal and the nervous system. These observers regarded the phenomenon, therefore, as brought about through a local reflex arc involving peripheral nerve centers. Bayliss and I at first accepted this interpretation. We were interested in the phenomenon as possibly showing an influence of the local nerve centers, whose action on intestinal movements we had just studied, on the chemical processes of the gut and its appendages, and we, therefore, sought to determine the conditions of the reflex more closely.

We found, however, very soon that the experiment could be so devised as to exclude any possible intervention on the part either of the central or the peripheral nervous system, and yet obtain secretion from the introduction of acid into the gut. Thus, if a loop of the jejunum be tied at two ends, and all its nervous connections severed, so that it remains attached to the rest of the body simply by the blood vessels, introduction of acid into this loop evokes a flow of pancreatic juice as marked as that obtained from the introduction of acid

* Lecture delivered before the Harvey Society, New York, Jan. 11, 1908.

into a normal loop. Since the message from the gut to the pancreas, arousing its activity, can not reach it by way of the nervous system, the only possible channel left is the blood stream, and the messenger must, therefore, be some chemical substance discharged into the blood stream, and not a molecular change propagated along nerve fibers. That the messenger can not be the acid itself was easily shown by injecting acid into the portal vein, when no effect was produced.

We see, then, that acid introduced directly into the blood has no effect, while if it be injected into a cavity separated from the blood by only the epithelial cells of the intestine it has an effect. The chemical messenger, therefore, must be something produced in the epithelial cells under the action of the acid and discharged by them into the blood stream. This conclusion was speedily realized. When we scraped off some of the epithelium, rubbed it up with acid, and injected the hastily filtered mixture into the blood stream of the animal, a flow of pancreatic juice was obtained considerably greater than any we had hitherto obtained as the result of injecting hydrochloric acid into the lumen of the intestine.

To this chemical messenger we gave the name of "secretin." In order to obtain it free from admixture with the protein constituents of the cells, the ground-up intestinal epithelium was boiled with 0.4 per cent. hydrochloric acid and while boiling was neutralized. In this way all the coagulable protein was thrown down. The filtrate was found to exert a strong exciting effect on the secretory activities of the pancreas.

This mode of preparation shows that secretin is neither a ferment nor a protein. Other experiments have shown that, while fairly stable in acid solution, it is very rapidly destroyed in alkaline solution. It is soluble in fairly strong alcohol, or alcohol and ether, but is insoluble in absolute alcohol. It is fairly diffusible through parchment paper and is not precipitated by the ordinary alkaloid precipitants. The ease with which it undergoes oxidation has hitherto foiled all attempts to isolate it in a pure form, but the properties mentioned suggest that it is a body of comparatively low molecular weight, and that it ought to be possible to obtain it in crystalloid form. In much of its behavior it resembles adrenalin, the isolation of which presented at first many difficulties, but was finally successful in the hands of Takamine. This body, secretin, can be regarded as a type of a whole group of chemical messengers, which, formed in one organ, travel in the blood stream to other organs of the body and effect correlation between the activities of the organs of origin and the organs on which they exert their specific effect. For these chemical messengers we have suggested the name of "hormone," from ὁρμαω, I arouse or excite.

It may be remembered that Ehrlich divided the chemical agents which act on the organism into two classes, which we may shortly describe as the toxins and the drugs. As a type of the first class, we may instance a poisonous constituent of jequirity which has been called abrin, of castor-oil seeds, ricin, as well as the toxic products of pathogenic micro-organisms, such as the well-known toxins of diphtheria or tetanus. All these bodies introduced in minimal doses into the organism evoke characteristic effects either local or general. The specific character of their physiologic action suggests that these toxins have special affinities for one or other tissue of the body, affinities conditioned by their chemical character as well as by that of the affected organs.

In this respect they are entirely analogous to the drugs which form the main part of our pharmacopeias, and of which we may take strychnin, morphin or arsenic as types. There is, however, one marked distinction between the two groups. When repeated small injections are made of a body belonging to the group of toxins, the physiologic effect produced becomes progressively less, and it has been established that the immunity to their action which is thus brought about is due partly, at any rate, to the formation of substances in the organism which are the physiologic antagonists of the toxins and have the power of combining with and neutralizing these substances.

Thus, if the blood serum of an animal rendered immune by repeated doses of diphtheria toxin, is mixed with some of the diphtheria toxin itself, the resultant mixture, which may contain many hundred times the lethal dose of toxin, may be injected into an untreated normal animal without producing any effect. Although in the case of certain of the drugs, such as morphin, a limited degree of tolerance may be established, there is no evidence of the production at any time of antitoxic substances in the treated animal.

Now, it is evident that if a substance is to act repeatedly as a chemical messenger through the medium of the blood between one organ and another, its function would be abolished if the discharge of the chemical message into the blood stream gave rise to the production of an antibody. These chemical substances, or hormones, must, therefore, as a necessary condition of their function, belong to the class of drug substances, generally crystalline, or at any rate not belonging to the colloid class, of definite chemical composition, and in most cases of comparatively low molecular weight. Their action on the chemical basis of the protoplasm must be determined by their molecular structure, and in all probability must be ranked with the purely chemical processes, rather than with those mixed chemical and physical processes which determine the formation of adsorption compounds and distinguish the interaction of one colloid with another, as well as of toxins with the animal cell or with their corresponding antitoxins.

It is only necessary to remind one of a number of well-established correlations of function effected by the intermediation of these hormones in order to carry conviction of the very large part that they must play in the normal processes of the body. In the alimentary canal itself, the chemical correlation between intestine and pancreas does not stand alone. Thus, Pawlow showed that the secretion of gastric juice occurs in two phases, the first phase being excited through the vagus nerve by appetite, or by impulses from the mouth, while the second phase was determined by the presence of certain substances in the stomach. Edkins has shown that the secondary secretion of gastric juice is determined by the production of a hormone in the pyloric part of the mucous membrane under the influence of the first products of digestion, and that this hormone is absorbed by the blood and carried by it to the gastric glands of the fundus which are thereby excited to renewed activity.

The secretion of the intestinal glands is partly excited through the local nervous system by the mechanical stimulation of the mucous membrane. It is probable, however, that the pancreatic secretin formed in the duodenum, and perhaps other hormones produced in the intestine, have a direct action through the blood on the secretory processes of the small bowel. The

simultaneous presence of bile and pancreatic juice in the duodenum, which is necessary for the full unfolding of the digestive activity of these juices, is secured by the fact that the secretin formed in the intestinal mucous membrane under the influence of the acid chyme, has a specific excitatory effect not only on the cells of the pancreas, but also on those of the liver. The postprandial rise of biliary secretion is synchronous with the postprandial rise of the pancreatic secretion, and in both cases the secretion is determined by the secretin circulating in the blood as the result of the action of acid on the cells of the duodenal mucous membrane.

It is possible that chemical factors play an important part not only in arousing the secretion of the digestive juices, but also in determining the absorptive activity of the intestinal epithelium. I do not see how otherwise we are to explain the remarkable effects on the absorption of the foodstuffs which ensue on the total extirpation of the pancreas. Whereas ligature of the ducts of this organ leaves the absorption of foodstuffs, other than fats, practically unaffected, its total extirpation diminishes by one-half the absorption both of carbohydrates and proteins and almost entirely annuls the absorption of fat.

When we pass to the other functions of the body, we find many other instances of correlation by undoubted chemical means, as well as instances in which, with our present knowledge, we can find no other explanation of observed phenomena than the assumption of such chemical means. Perhaps, the best marked case is that presented by the regulation of the respiratory movement in accordance with the needs of the organism, especially of the muscles for oxygen.

The increased depth and frequency of respiration contingent on muscular exertion are familiar to every one, and we know that the physiologic object of such changes is to secure the increased ventilation rendered necessary by the enormous rise of gaseous metabolism which accompanies muscular exercise. Even moderate work may raise the gaseous exchanges to between four and eight times their amount during rest. This increase in the respiratory movements is entirely involuntary, and may, in its earlier stages, when affecting chiefly depth of respiration, be unnoticed by the subject of them.

How is the respiratory center aroused to an increased activity which is strictly proportional to the increased metabolism of the distant muscles? A nervous path is at once excluded by the fact that hypernea or even dyspnea may be excited in an animal, after division of the spinal cord, by tetanization of the muscles of the hind limbs. Zuntz and Geppert, therefore, came to the conclusion that the exciting agent in this increased activity was some acid substance or substances produced by the contracting muscles and transmitted from them through the blood stream to the respiratory center.

The subject has been investigated lately by Haldane and Priestly. In a series of masterly experiments these observers show that the chemical messenger in this case is none other than carbon dioxid. The contracting muscle, when properly supplied with oxygen, takes up this gas and gives out carbon dioxid in direct proportion to the energy of its contractions. The carbon dioxid, diffusing rapidly into the blood stream, raises its percentage and, what is still more important, its tension in this fluid. The respiratory center differs from the other parts of the central nervous system in having developed a specific sensibility to carbon dioxid. Its normal activity is determined by the normal tension of this gas in the blood and lymph bathing the center. Diminution of the tension of this gas depresses the activity of the center, causing slackening of respiration, or even the total cessation of respiratory movements, known as apnea.

This work by Haldane may be regarded as finally deciding a question which has been the subject of debate for nearly half a century. The dyspnea, caused by the circulation of venous blood through the brain or by the deprival of the respiratory center of the means of maintaining its normal gaseous interchanges, has been variously attributed either to oxygen starvation or to carbon dioxid intoxication of the center. Haldane shows that the center is very little sensitive to changes in the oxygen tension of the blood. The oxygen tension in the pulmonary alveoli may be altered from 20 per cent. to 8 per cent. without any increase in the depth or frequency of the respiratory movements. In these circumstances the heart or circulatory system may feel the deprivation of oxygen before the respiratory center has responded to it. On the other hand, a rise of only ½ per cent. in the tension of carbon dioxid in the alveolar air, and, therefore, in the blood circulating round the respiratory center, will increase the volume of air respired 100 per cent.

This simplest of all examples of a co-ordination of two widely separate organs by chemical means may, perhaps, give us a clue to the mode in which the more complex of such correlations have been evolved. The chemical messenger is here a product of activity which is common to all protoplasm and must be excreted by the cell as a condition of its further activity. The adaptation in this case, therefore, is not the formation of a special substance which shall exert a specific influence on some distant organ, but the development in this distant organ of a specific sensibility to the common product of excretion of the first organ. We may, perhaps, assume that the more specialized messengers, which we shall have to consider in detail later, were at first accidental by-products of the selfish activity of the organ producing them, the first step in the development of a correlation being the acquisition of a sensibility to the substance in question by some distant organ.

The only other example of such a reaction, in which we know both the source and nature of the chemical messenger and the exact nature of the effects which it produces, is the suprarenal gland. Since the time of Addison we have known that atrophy of these glands in man leads to a disease characterized by the three cardinal symptoms of bronzing, vomiting and extreme muscular weakness. Most of the attempts to reproduce this disease in animals have failed, owing to the fact that death follows the excision of both glands within 24 hours; the extreme muscular weakness is certainly produced, and this is attended by a profound fall in the general blood pressure.

In 1894, Oliver and Shäfer showed that from the medulla of the suprarenals a substance could be extracted which, on injection into the circulation, caused a marked rise of blood pressure and increased strength of the heart beat. Since the publication of these observations, our knowledge concerning the nature and actions of this substance has progressed rapidly. The researches of Jowett, of von Fürth and others, have shown that the active substance is a definite chemical compound derived from pyrocatechin and having the formula: $(HO)_2.C_6H_3.CHOH.CH_2.NH.CH_3$.

Dakin has synthesized a whole array of substances which are closely allied to this body in their chemical structure as well as in their physiologic influence on the animal organism.

In order to comprehend the point of attack of adrenalin, the specific secretion of the medullary part of the suprarenal glands, we shall do well to go back to the mode of development of these organs. It was shown by Balfour that the suprarenals have in the fetus a twofold origin, the cortex being derived from the mesoblastic tissue, known as the intermediate cell-mass, while the medulla is formed by a direct outgrowth from the sympathetic system, and consists, at first, of an aggregation of neuroblasts. In some animals, e. g., teleostean fishes, the two parts of the gland thus formed remain separate throughout life, but in the higher vertebrates the sympathetic outgrowth becomes surrounded by the cortex and the cells rapidly lose all traces of resemblance to a nerve-cell. But the medulla is genetically part of the sympathetic system, and its specific secretion, adrenalin, has an action which is apparently confined to the sympathetic system. In whatever part of the body we test the effects of adrenalin, we find that they are identical with the results of stimulating the sympathetic nerve fibers which run to that part. Thus, in all the blood vessels of the body, adrenalin causes constriction; the contraction of the heart muscle is augmented, the pupil is dilated, while the intestinal muscle, with the single exception of the small ring of muscle forming the ileocolic-sphincter, is relaxed. The action of the sympathetic on the bladder differs, as shown by Elliott, markedly in various animals; but, whatever its effect, a similar one will be produced in the same animal by the injection of adrenalin.

I have already mentioned that excision of the suprarenal bodies causes a profound fall of blood pressure, which continues until the death of the animal, and it has been stated that, when this fall is well established, it is impossible to raise the blood pressure by stimulation of the splanchnic nerve, or, indeed, to produce any effect at all on stimulation of the sympathetic nerve. Thus not only does adrenalin excite the whole sympathetic system in its ultimate terminations, but its presence in the body as a specific secretion of the suprarenal bodies seems to be a necessary condition for the normal functioning, by ordinary reflex means, of the whole sympathetic system. We are dealing here with a problem which, betraying, as it does, an intimate relationship between nerve excitation and excitation by chemical means, promises by its solution to throw a most interesting light on the nature of the nerve process and of excitatory processes in general.

Our knowledge of certain other members of this group of chemical reactions is so shadowy that a mere mention of them will suffice. As an antithesis to the vasoconstrictor action of adrenalin, we find that every organ, when active, is supplied with more blood in consequence of a vasodilatation of the vessels which supply it. In certain instances, Bayliss and I have found that boiled extracts of organs, when injected into the circulation, may evoke vasodilatation of the same organs of the animal under investigation, and we have suggested that the normal vasodilatation accompanying activity is brought about in consequence of the specific sensibility of the arterial walls to the metabolites of the organ which they supply. Too much stress, however, can not be laid on these experiments, since a more extended series by Swale Vincent has failed to give a general confirmation of our results.

The severe diabetes, which, as shown by Minkowski, can be produced in nearly all animals by total excision of the pancreas, has been held to denote the normal production in this organ of some substance which is indispensable for the utilization of carbohydrates in the body. All efforts to obtain a more exact idea of the nature of this pancreatic substance or influence have so far proved in vain. Ordinary sugar, when placed in contact with extracts of muscular tissues, undergoes oxidation, and Cohnheim states that this process is much accelerated if an extract of pancreas be added to the extract of muscle. A repetition of Cohnheim's experiments by other observers has shown that the effect is so small as to be almost accidental, and we must, therefore, regard the nature of the pancreatic influence on carbohydrate metabolism and the causation of pancreatic diabetes as problems still to be solved.

In the case of the pituitary gland we have an organ of, as yet, unknown function, but which we must regard as concerned in determining the activity of widely differing parts of the body, probably by the production of chemical substances or hormones. Pathologically, all we know is that disease of this organ is apt to be associated with overgrowth of the osseous system. As a result of physiologic experiment, we know that from the nervous part of this organ we can extract, as Schäfer has shown, a substance which, like secretin, is unaltered by boiling, and which has a specific action on the secretory activity of the kidney, producing diuresis, which can not be ascribed simply to the concomitant changes in the circulatory system. This extract, moreover, has a marked influence on the uterus. What part is played by this pituitary influence on these distant organs in the normal working-life of the body we do not know as yet.

So far the chemical adaptations which I have described have resulted almost exclusively in increasing the activity of the responding organ. We can not, however, draw a sharp line between reactions involving increased activity or dissimilation and those which involve increased assimilation or growth, since under physiologic circumstances the latter is always an immediate sequence or accompaniment of the former.

In a certain number of chemical correlations the primary effect of the hormone is increased growth or assimilation. In these cases, since the assimilative stimulus builds up the responding organ, its final effect is to increase the activity or functional capacity of this organ. Just as dissimilation brings about later increased assimilation, so increased assimilation brings about later increase of dissimilatory capacity.

The most familiar example of a chemical correlation, evoking the building up of tissues, is that presented by the thyroid gland, though the effects of the chemical substance formed by the thyroid are so widespread, and differ to such an extent according to the age of the animal employed, that a physiologic analysis of its results is still difficult to give. In the growing animal the chemical substance secreted by the thyroid evidently influences the growth of tissues, among others of the bones; and it is a familiar fact that injection or administration of thyroid to cretins will result in a restoration of the child toward normal, in increased growth of bones, and in development of various functions, including those of the brain and central nervous system. In adults, on the other hand, the most pronounced effect

of injection of thyroid is increased activity of the chemical changes of the body, as instanced by the increased nitrogenous metabolism and disappearance of all overgrowth in the subcutaneous connective tissue, such as is present in myxedema. Although, therefore, the main result of thyroid treatment is to restore normal growth where such has been previously wanting, it is difficult to say whether its primary effect should be regarded as dissimilative or assimilative.

The fact that the thyroid gland can be administered by the mouth shows that the active principle is not destroyed by the gastric juice, and would, therefore, remove this from the proteid class of bodies, and would diminish very largely any probability of the hormone furnished by this gland being of the nature of a toxin. Whether it is represented by the thyroiodin, the organic iodin compound extracted from the gland by Baumann, though probable, is still unproved, and we can only conjecture that in all probability, when isolated, it will be found to belong to the drug class rather than to the toxin class. We are still quite without knowledge as to the conditions which determine the amount of active substance produced in the thyroid gland. All we know is that the activity of the thyroid, like that of the suprarenal gland, is essential to the normal development of the functions of the body. Whether we are dealing here with a constant process, or with a chemical reflex similar to those we have studied in the alimentary canal and evoked by some event affecting directly the thyroid gland, we can not say.

The largest group of correlations between the activity of one organ and the growth of others is formed by those widespread influences exercised by the generative organs on the body as a whole and on parts of the body. The effects of removal of the testes in the male animal on the growth and disposition of the individual have been known for centuries. The experiments of Shattock and Seligman show that the formation of the so-called secondary sexual characters must be due to chemical influences from the gland and not to metabolic changes set up by a nervous reflex arising from the function of sperm ejaculation.

Corresponding results have been obtained in the female by extirpation of the ovaries, double oöphorectomy before puberty, not only preventing the onset of puberty and the occurrence of menstruation, but also modifying the future growth of the whole body in the direction of the male character. It has been shown recently by Marshall and Jolly that the changes in the uterus which determine menstruation are probably due, not to ovulation, but to an internal secretion arising from the ovary.

More definite evidence of a direct influence of the ovary on the growth of the uterine mucous membrane has been furnished by the experiments of Fraenkel, as well as those of Marshall and Jolly. At the suggestion of Born, Fraenkel removed the ovaries of rabbits from one to six days after copulation, in order to decide whether the ovary exercised any influence on the growth of the mucous membrane of the uterus and its preparation for the fixation of the ovum. In every case, on subsequently killing the animal, it was found that extirpation of the ovaries had prevented the fixation of the ova. On the other hand, if the ovaries were removed on or after the fourteenth day of pregnancy, which in the rabbit lasts about thirty days, the animals went on to full time and healthy fetuses were produced.

The fact that the corpus luteum of pregnancy grows enormously during the first third of pregnancy and then diminishes in size, suggests that this hypertrophy and growth of cells are for the express purpose of influencing the mucous membrane; and Fraenkel states that destruction of the corpora lutea by means of the galvanocautery is as efficacious as is total removal of the ovaries in determining the end of pregnancy. The cells which form the corpora lutea are derived, not from connective tissue cells, but from the interstitial cells lying immediately outside the Graafian follicles. Their origin is, therefore, identical with that of the interstitial cells of the ovary, viz., from the primitive germinal epithelium.

A still more striking example of growth in response to chemical stimulation from distant organs is afforded by the mammary glands. As is well known, at birth these organs are limited to a few ducts in the immediate neighborhood of the nipple and equal in extent in both sexes. At puberty, in the human female, there is a growth of the breasts, associated with some gland growth, the main increase in size, however, being due to fat. With the occurrence of pregnancy, a true hypertrophy of the gland begins at once and continues steadily up to birth.

In the rabbit, in which we have studied the changes in the gland, it is extremely difficult to find in the virgin even a trace of mammary gland. The nipple is small and undeveloped, and on making serial sections through the nipple the gland is found to be confined to a few ducts not extending more than a few millimeters outside the nipple. No trace of secreting alveoli is to be observed. With the occurrence of pregnancy a rapid growth of the gland appears to begin at once. Five days after impregnation, when it is still impossible to find the impregnated ovum with the naked eye in the enlarged uterus, the mammary glands are marked out as small pink patches about two centimeters in diameter just under each nipple.

On microscopic section the gland is found to be made up chiefly of ducts, which, however, are undergoing rapid proliferation. The cells lining the ducts are about three deep and present numerous mitotic figures. At about the fourteenth day the whole of the front of the abdomen is covered with a thin layer of mammary tissue. Branching ducts, with proliferating epithelium, are still the predominant feature on section, but here and there, especially toward the margins of the gland, small secreting alveoli, lined with a single layer of epithelium, are to be seen. After this time the gland grows with ever increasing rapidity, so that at birth, at the thirtieth day after impregnation, the mammary glands form a layer about half a centimeter thick over the whole of the abdomen.

In the virgin rabbit it is impossible to obtain by expression any fluid from the nipples, but from the fifth to about the twenty-fifth day pinching the nipples results in the expression of a clear, colorless fluid. From the twenty-fifth day onward this fluid becomes opalescent, and during the second and third days immediately preceding birth the fluid obtained is typical milk. The appearance of milk is earlier in multiparous rabbits, and in animals where pregnancies succeed each other rapidly it may be possible to express milk throughout the whole of pregnancy.

In the primiparous rabbit termination of pregnancy at any time after the fifteenth day results in the appearance of milk in the mammary glands, a result which has also been observed in the human female under cor-

responding conditions. That this onset of lactation is not due to any stimuli, chemical or nervous, received by the mammary glands from the involuting uterus or ovaries is shown by the fact that it may be brought on by performing total extirpation of ovaries and pregnant uterus. The essential feature therefore seems to be in this case the removal of the growing fetuses.

In order to determine the nature of this connection, Miss Lane-Claypon and I carried out a number of experiments in which extracts made from different parts of the immature rabbit fetuses were injected into virgin rabbits. In a certain number of cases, where the injections had been sufficiently numerous, we got well-marked hypertrophy of the mammary glands similar to that observed during the earlier stages of pregnancy. From our results we came to the conclusion that the growth of the mammary glands during pregnancy is due to the assimilatory or inhibitory effects of a specific hormone produced in the body of the fetus and carried thence through the placenta by the fetal and maternal circulations. The removal of the inhibitory stimulus at the end of pregnancy determines the spontaneous breakdown of the built-up tissues, i. e., activity, which in these cells is expressed by the formation of milk.

It is probable that many other instances of chemical correlation will be revealed by future research. Already, however, an enormous material for experimental investigation is afforded by the facts I have already brought to your notice. In only two of the instances of chemical correlation do we know the chemical nature of the hormone. Future research must determine the chemical nature of the hormone in each case, as also the conditions of its formation and the part it plays in the normal chain of events or adaptations which make up the life of the animal organism.

In working out these problems we may look forward to the prospect of increasing power over the functions of the body. The whole of medical science is but a struggle for control of the processes which determine the life of man, and no field seems to me more promising than that over which we have to-day cast a fleeting glance. A knowledge of the whole field would place us in command of the means employed by Nature herself for determining the activities of most of the functions of the body, viz., drugs, or hormones, which effect their purpose and are then destroyed. It was in view of the prospective importance of this field of studies in the future work of the medical man that I have ventured to present the subject at this time.

**Silver Ionization in Treatment of Urethritis.**—Melun of Bucharest reports the successful treatment of chronic urethritis by irrigation with a 1 or 2 per cent. solution of silver nitrate decomposed by the action of an electric current. In his communication to the *Ann. d. Mal. Gén.-Urin.*, Nov. 15, 1907, he gives an illustrated description of the sound he uses for the purpose. It is made of hard rubber, about 9 inches long, and the size of a No. 18 Charrière sound. It is closely studded with perforations; a wire inside running to the tip of the sound is connected with a galvanic machine. He injects about 10 gm. of the fluid, closes the stopcock to hold the fluid in the urethra, and turns on the electric current, with the negative pole applied to the patient's body. The current can be gradually increased to 30 or 40 milliamperes without discomfort, and the sitting is continued for fifteen or thirty minutes. This releases the ions of silver and drives them into the tissues, curing inflammation of long standing rebellious to all other measures.

## *Original Articles*

# PASSIVE HYPEREMIA

## BY MEANS OF THE CUPPING-GLASS OF BIER AND KLAPP.

B. M. BERNHEIM, M.D.

BALTIMORE.

During the last few years there has been a great deal written[1] about the treatment of infections (pyogenic, tuberculous, gonorrheal, etc.) by means of hyperemia according to the methods of August Bier. American physicians and surgeons traveling abroad have had ample opportunities to see the treatment used and the striking results obtained; and, indeed, many have gone to Bier's own clinic in Bonn (now in Berlin) for that express purpose. Still we have been rather reluctant to adopt this simple, time-saving, pain-relieving, effectual remedy. There has been comparatively little written about it in English, and what has been written was mostly concerned with results and opinions as to efficacy, etc., rather than methods and technic, so that it seems wise at this time to give a somewhat brief outline of these last. At some future date the results obtained at the Johns Hopkins Hospital Surgical Dispensary will be given.

As is well known, there are two distinct kinds of hyperemia, active and passive or arterial and venous. Each has its place in the method as used by Bier, but as this paper is to deal only with hyperemia as produced by the cupping-glass (Schröpfkopf), the venous or passive form alone need be considered.

The use of the cup is not new, and Bier himself is the first to acknowledge this, making no claim to a discovery. All over the world people have been cupping inflammations, sores and the like for years, but in a crude and clumsy manner. About 1890 Bier began to use the cup in the treatment of tuberculosis, although marked success did not follow this attempt, probably, as he later says, because too much pressure was used. Thus the method fell into disuse until, some few years later, Dr. Rudolph Klapp, assistant to Bier, again tried it in the treatment of mastitis. He had seen the poor results, as far as future functioning goes, obtained by the usual method of radial and wide incision in the breast for infection. Numerous methods of treatment had been devised to avoid this, such as Bardenheuer's half-moon-shaped incision at the base of the breast and drainage from below, but none of them gave satisfactory results. Therefore, Klapp decided to try the cup, and with very happy results.

1. Those wishing to refer to previous publications will find the following of value:

Adams: Value of the Bier Treatment, N. Y. Med. Jour., 1906, lxxxiv, p. 336-8.

Bier: Hyperæmie als Heilmittel; also Die Behandlung akuter Eiterungen mit Stauungshyperæmie, Muench. med. Wochschr., 1905, Nos. 5, 6, 7; also Hyperæmie als Heilmittel, Montreal Med. Jour., 1906, xxxv, p. 391-9.

Bloodgood: Progressive Medicine, December, 1906 and 1907.

Bradford: The Hyperemia Treatment of Congested and Inflamed Tissues, Boston Med. and Sug. Jour., 1906, cliv, 671-674.

Breuer: The Bier Treatment by Hyperemia, Med. Rec., 1906, lxix, 290-3.

Codman: On the Bier Treatment of Infected and Septic Wounds of the Extremities, Boston Med. and Surg. Jour., 1906, clv, 434.

Klapp: Ueber d. Behandl. entzündlicher Erkrankungen mittels Saugapparaten, Muench. med. Wochschr., 1905, No. 16.

Willy Meyer: Bier's Treatment (Stauungs-hyperemia) in Chronic and Acute Surgical Infectious Diseases. THE JOURNAL A. M. A., 1907, xlix, No. 7.

Perthes: Erfahrungen bei der Behandlung des Empyems der Pleura, Mitt. a. d. Grenzgeb. d. Med. u. Chir., vol 7, Nos. 4 and 5, 1901.

Tillmans: Ueber die Behandl. durch ven. Stauung. Deutsch. med. Wochschr., Leipz. u. Berl., 1905, xxxi, 129-132.

From treating mastitis with hyperemia as induced by the cup, it was not a very far step to trying it on other infectious processes, such as furuncles, carbuncles, infected fingers, hands, toes, tuberculosis, in fact all sorts of infections. The greatest difficulty, that of so simplifying the cups as to make them easy of application, has been successfully accomplished, as will be seen by the accompanying illustrations. Cups of all sizes and shapes have been devised; they can be had to fit an infected bursa on the elbow, an abscess on the buttock or an infected great toe, and the application of one is almost as easy of accomplishment as is that of the other.

A cup of the correct size and shape to fit the part to be treated having first been selected, its edges are well greased with any kind of fat, such as vaselin. The rubber bulb is attached to the cup and compressed (fully, if the entire pressure is wished, half-way if only half is desired, etc.). If, now, the cup is held between the first finger and thumb of the left hand and the compressed bulb in the right hand, a little firm pressure against the part to be treated will serve to get the cup's edges well approximated against the skin. When this is obtained the right hand gradually releases the bulb, drawing the air out of the cup and causing the area covered to be sucked up into it. Here one must observe the most important point in the whole treatment—the patient should suffer no pain.

In this connection two factors are to be considered. First, the cup must be of such size and shape as to get entirely outside of the area of infiltration (where this can not be done some other form of treatment must be found, or, if it is absolutely necessary to try the cup, the matter of pain can be explained to the patient); second, the pressure must be regulated. The former is often very difficult to overcome; the latter is easy, consisting, as noted above, in compressing the bulb only to the extent to which pressure is desired. To neglect either is to invalidate the whole procedure.

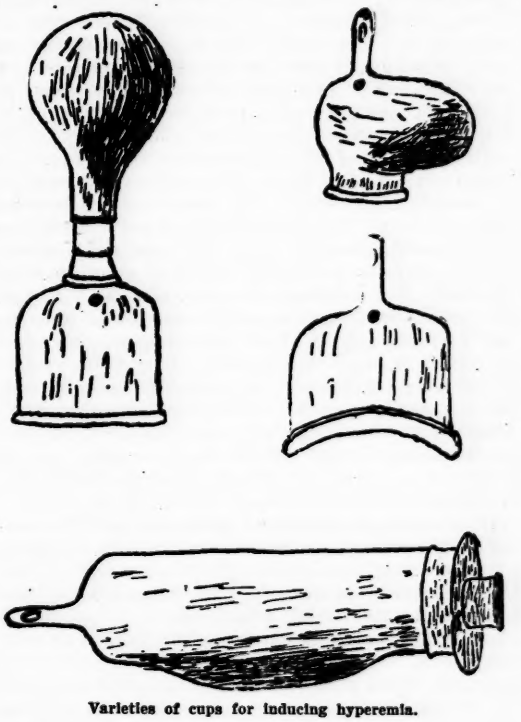
Painlessly, then, the area covered by the cup is gradually drawn up into it. According to the degree of pressure used, the skin is first faintly red, bluish red, blue, very dark blue. The bluish-red tint should always signify the limit; too much pressure, even though exerted without pain, may induce hyperemia amounting to stagnation, obviously not the end desired.

As the pressure is gradually augmented in, for example, a carbuncle (previously opened), pus will begin to ooze from the numerous pockets, accompanied by some blood, the amount of both depending on the degree of pressure used. Aside from observing the signal of color gradations, the general rule for pressure is to increase up to the point at which pain is felt and then to stop. The pus and blood will soon cease to flow, and the cup is left in place, continuing the suction for about five minutes.

At the end of this time the pressure is released and the cup removed. The exudate is gently removed with a piece of sterile gauze, wet with warm water, salt solution, boric acid or bichlorid, following which the part is bathed and left at rest about two minutes, the hyperemia and edema partly subsiding. The cup is then reapplied for five minutes, during which time a little more pus and blood exude. Two more minutes of gentle cleansing and bathing follow, after which there is another application. This alternate cupping and resting is kept up for from thirty to sixty minutes. At no time must the pressure be so great as to cause pain to the patient. One is apt to try to increase the pressure in order to draw out the remaining pus. This is a mistake, removal of the pus being incidental to the treatment, the real purpose of which is to create a hyperemia.

At the end of the sitting the part is gently bathed again; all exudate is carefully removed with sterile gauze and forceps—this means pus, clots, slough, detritus, whatever is unattached and comes away without pain or bleeding—and a simple wet dressing is applied.

The patient is instructed to present himself again for treatment on the following day. If a crust has formed, as over a sinus, it is removed carefully with a blunt instrument and the treatment instituted as on the preceding day. The pus will usually be found to decrease each day, the granulations to become healthier looking, firmer to the touch and less liable to bleed. The patient will be able to stand greater pressure without pain, the part without stagnation of the blood current, the redness and infiltration will decrease. The pus, aside from



Varieties of cups for inducing hyperemia.

decreasing in amount, gradually loses its thick, greenish-yellow, tenacious character, getting thinner, light yellow and more easily fluent. On further treatment it becomes watery, seropurulent and finally ceases altogether, the cupping then drawing away only a few drops of pale blood serum, which little by little lessens until the part becomes dry and healing takes place.

Experience has shown that the first few days are the most important in the treatment; therefore, during that time cupping should be continued for from thirty to sixty minutes, always, of course, in periods of five minutes, followed by two minutes rest. Later on, as the condition improves, the length of the treatment is gradually reduced, the last one being of only five minutes duration. In very severe cases cupping may be performed twice a day, morning and evening, though this is rarely necessary. Generally the patient comes every

day for the first few times, after that every other day, then every three days or every five days until cured.

A simple wet dressing is applied after each treatment. Squeezing or massaging of the part, to get out the remaining pus, is not allowable, nor is curetting. It is best also to avoid the probe, though at times its use is demanded for purposes of exploration. The use of drains in any way, shape or form is not permicsible. Splints, too, are to be avoided. On the contrary, the patient should be encouraged to make use of the affected member.

Frequently patients present themselves early in the course of the infection (as, for instance, in a beginning furuncle, carbuncle, ischiorectal abscess, bubo, etc.) before localization has occurred, only the usual redness, swelling, tenderness and infiltration being present. The treatment in these cases should be instituted, as outlined above, without making an incision, because resolution sometimes follows without the use of the knife. Where, however, incision is demanded a cut 1 to 1½ cm. long is made under ethyl chlorid anesthesia and the cup is applied immediately. From day to day, as the tissue breaks down and the pus is drawn out, the hyperemia soon overwhelms the infection and resolution follows, no drainage having been used.

In cases of bone tuberculosis, sequestra are sometimes drawn out; at other times, although they are known to be present, they do not come away and are best left undisturbed, for Bier has found that occasionally they reunite with the healthy bone. Likewise, the formation of cold abscesses is not to be looked on as an untoward occurrence, but rather as a necessary phase in the course of the disease. They should be recognized promptly and the usual incision (1 to 1.5 cm.) made, after which the cup is to be used. Curetting, probing or injection of iodoform emulsion is best avoided. These increase the chances for secondary infection. Immobilization is unnecessary; on the contrary, mobilization is desirable, for it has been found that healing takes place just as rapidly, if not more rapidly, under these conditions. The difference in the end results is self-evident.

In cases of acute mastitis it is essential that the diameter of the cup exceed that of the breast by at least 1 cm. in order to avoid pain. The treatment is, in general, the same as in any other infection, although there is one difference worthy of attention. It happens at times that although the breast is engorged with milk and there is, in addition, a great deal of pus present, the large cup draws almost nothing away. Here a small cup should be applied over the nipple and incision, after the treatment, simply to draw off the pus and milk. This, quite naturally, may give rise to some pain, but is hardly necessary more than two or three times, after which drainage will be free with the big cup alone. This procedure, of course, is to be adopted only in the presence of pus. Where no breaking down of tissue has occurred, the simple cupping, without incision, may be proceeded with, as these cases often clear up in a very few days.

There are instances when prudence advises against the use of the cup and urges an immediate radical operation with drainage. We believe we have had two such cases. One was a huge mammary abscess of four weeks' duration in which the breast was twice the ordinary size, very tense and extremely tender to the touch. The other was an infection of the hand, originating in a finger, where the process was so rapid and the infecting agent so virulent that it was deemed unsafe to trust to anything but wide and deep incision with drainage, and the rubber band (another means of inducing passive hyperemia) around the upper arm.

It is wise, therefore, in this, as in any other procedure, not to be too radical or dogmatic. Undoubtedly, cases do occur where the use of the cup is positively harmful and contraindicated. At times this will be self-evident, as in the two cases just mentioned, but once in a while only a trial of the cup can lead to a decision. It goes without saying that if the process, after one or two treatments, does not at least come to a standstill, the cup should be given up. But it occasionally happens that, while there is no actual backward step, the process does not progress toward recovery. We have made it a rule in these cases that, if there has been no error in technic or other evident reason for the failure, the cup would best be discarded after about one week's trial.

The advantages claimed for this method of treatment are:

1. Relief of pain. This is one of the most striking yet inexplicable features connected with it. The throbbing, jumping, beating pain of a mastitis is often checked in one treatment with the cup—and this is true even when there is no pus and, consequently, no incision.

2. Rapidity of cure, the course of the disease being materially shortened.

3. Preservation of function. The tuberculous joints are not immobilized, healing taking place with motion, very frequently. The wide, radial incisions in the breast are not made, hence there is a minimum of scar tissue, which so often destroys the function of the gland.

4. The discarding of the drain, in itself a distinct advance.

5. Simplicity. The physician, as well as the surgeon, can use the method successfully.

---

## THE FREQUENCY AND THE SIGNIFICANCE OF ENDOMETRITIS FROM THE STANDPOINT OF TREATMENT.

BROOKE M. ANSPACH, M.D.
PHILADELPHIA.

At present it is a matter of some importance to know just how frequently the endometrium is the seat of inflammatory or other changes which require treatment. Such knowledge is especially valuable in reference to cases in which the sole pelvic lesion is supposed to be located in the mucosa of the uterus.

To those who in gynecologic practice are constantly meeting pelvic disease in its various forms the idea which is more or less prevalent concerning the part played by the endometrium in such diseases is a matter of surprise. For the truth is that the endometrium of itself is rather infrequently the seat of any pathologic alteration which would justify treatment directed to it alone. Notwithstanding this fact, the pathology and the treatment of endometritis are widely discussed subjects.

Tucker[1] first drew attention to the unwarranted consideration the subject is given in text-books. Thus in six books taken at random, twenty-seven different varie-

1. Etiology and Treatment of So-called Endometritis, THE JOURNAL A. M. A., Nov. 11, 1905, page 1480.

ties of endometritis were described and not a single one of them was mentioned in each book.[2]

This practice exaggerates the importance of the endometrium in the eyes of the general practitioner. In a large number of instances a chronic discharge is regarded as *prima facie* evidence of endometritis. Hunner[3] calls attention to the query so often heard: "What do you do for endometritis?"

As a matter of fact, inflammation of the endometrium occurs in all cases of gonorrhea which advance beyond the cervix, but the clinical distinction between an acute or a subacute endometritis and a beginning salpingitis is difficult and the therapy of acute cases is always rest and the application of heat or cold; never an operation or local treatment. When gonorrhea of the endometrium becomes chronic it is usually complicated by inflammatory lesions of the tubes and ovaries. A chronic uterine discharge in gonococcus cases, where the adnexa are not involved, almost invariably comes from the cervix. In neither instance is treatment directed solely toward the endometrium of any service.

Acute infection of the decidua or of the endometrium may be incident to labor and abortion. Under such circumstances it is advisable to make sure that there is no remnant of the placenta or the membranes in the uterine cavity, and then to treat the case palliatively, unless a pelvic lesion outside the uterus or in the uterine wall is demonstrable.

The class of cases in which the diagnosis and treatment of endometritis is most abused is that in which leucorrhea is the chief symptom, and no reason can be found for it by pelvic examination. It is in cases of this sort that a most careful study of the patient is required in order to find the real cause of the trouble.

What other lesions in addition to those primarily affecting the uterine mucosa may cause a persistent uterine discharge? General ill health associated with constipation and a sluggish pelvic circulation undoubtedly may induce a hypersection of the endometrial glands. In such a case the cause is general, and unless the underlying condition has persisted long enough to produce anatomic alterations in the mucosa no treatment directed especially against the endometrium will do any good.

It has been my experience that few of these cases present actual alterations in the mucosa of the uterus and can be cured by a curettement.

The cause of a leucorrhea from the uterine cavity is also sometimes found in the myometrium. Theilhaber[4] ascribes the leucorrhea sometimes observed in chlorosis to a relaxed and unhealthy uterine muscle.

What are the alterations of the endometrium which produce hypersecretion? Leaving polyps and malignant growths out of consideration, the inflammatory lesions are at once in thought. I have already indicated the two acute varieties of endometritis, gonococcus and septic. The septic form may be fatal, but it usually entirely subsides if it is properly treated. In the case of infection with the gonococcus there is little tendency for the lesion to heal, and it becomes chronic or leaves anatomic changes as a residuum of the acute infection. Both are usually associated, however, with more pronounced lesions, either in the cervix or in the tubes, and in neither event deserve treatment directed to them alone.

When consideration is paid to other forms of chronic endometritis it is necessary to digress for the moment and recite different interpretations of the word. Since the publication of Ruge's[5] paper, endometritis has been divided into glandular and interstitial forms. In the first case the anatomic change observed was in the glands, while in the latter the stroma was affected. Hurdon[6] and others refuse to accept this classification, and regard only those alterations of the endometrium in which there are active inflammatory infiltrations as endometritis. Where this is not evident, they speak of the alterations, formerly comprised under glandular endometritis, as edema of the endometrium, glandular hypertrophy, etc.

Whether this is the correct position or not does not come within the scope of this paper and makes no material difference. The question I have desired to answer is how often and under what circumstances do anatomic alterations, be they endometritis, glandular hypertrophy, or edema, of the mucosa of the uterus, occur? And a second query, which bears directly on the first, is: How often would the operative removal of the endometrium alone cure the patient?

In order to determine the clinical significance of endometritis, I have critically analyzed every case in which a histologic examination of the endometrium was made in the gynecologic department of the University Hospital. Up to Oct. 1, 1907, there were 483 specimens. They included scrapings from the uterus in 174 cases in which dilatation and curettement alone was performed; 81 cases in which curettement was done previous to an amputation of the cervix or a trachelorrhaphy, and 53 cases of retroposition of the uterus in which curettement preceded the operative measure to correct the malposition. Sections were also taken from the endometrium in 78 hysteromyomectomies for fibroid tumor of the uterus and in 60 hysterectomies for pelvic inflammatory disease. In estimating the lesions I have included under endometritis all of those alterations which Hurdon has described as glandular hypertrophy, edema of the endometrium, etc. The endometrium was classed as normal only when there was no anatomic alteration recognizable grossly or by the microscope.

The result of the analysis was as follows: Out of 174 cases of dilatation and curettement the endometrium

2. The description of so many varieties of endometritis leads to an overestimate of the importance of this disease. A multiplication of terms exists, because the affection is classified from so many different standpoints. For example, "glandular," "hemorrhagic," and "gonorrheal" endometritis may be applied to the same individual case, as one indicates the form of the disease from the histology, symptoms, or cause. The anatomic classification, or one based on the histology of the endometrium is to be preferred, because it is the simplest and because it limits the number of descriptive terms. By this means endometritis may be reduced to acute and chronic forms. The chronic are divided into glandular and interstitial. There are a few further subdivisions of glandular endometritis, but they are of interest chiefly to the pathologist, and have no especial clinical importance. It is, of course, commonly recognized, that acute endometritis is usually the result of gonorrhea or of septic infection of the endometrium. Aside from these two terms "acute gonorrheal" and "acute septic," it is difficult to indicate the histology of an endometritis by names which are descriptive of its source. There is no definite relation between the form of chronic endometritis and the cause, and this is a sufficient reason for not using the etiologic classification. It is unnecessary to point out the numerous varieties that a classification based on symptoms would entail. The terms "suppurating," "hemorrhagic," "exfoliative," "putrid," which have been used to designate certain cases of endometritis, are sufficient indications of the extent to which such a classification may be carried; the words "virginal" and "senile" as applied to this disease mean very little, and should not be used.

3. Treatment of Leucorrhea with the Actual Cautery, THE JOURNAL A. M. A., Jan. 29, 1906, 191.

4. Die Variationen im Bau des Mesometrium und der Einfluss auf die Entstehung von Menorrhagien und von Fluor. Arch. f. Gynäk., lxvi, i, 1.

5. Etiologie u. Anatomie der Endometritis. Ztschr. f. Geb. u. Gynäk., v. 317.

6. Gynecology and Abdominal Surgery, Kelly and Noble, I, p. 106.

appeared normal in 80, or a little less than half; among 81 cases of repair or amputation of a lacerated cervix the endometrium was normal in 15; in 78 hysteromyomectomies the endometrium was normal in 11; out of 60 cases of pelvic inflammatory disease the endometrium was normal in 12, and in 53 cases of retroposition of the uterus the endometrium was normal in 24. As curettement was not performed and the endometrium was not examined in any cases which did not present the indications of endometrial disease, or of malignant growth, it can be seen that the number of times alterations were found in the 483 specimens above represents the number of times a diseased endometrium was encountered in the service at the University Hospital from October, 1899, to October, 1907. There were 2,286 gynecologic patients during this time. Among them there were 337 instances of diseased mucosa, but only 94 occurred as clinical entities, and 243 were associated with more serious lesions requiring operation.

It can at once be seen that the endometrium is diseased in no more than half of the cases in which curettement is done for a suspected endometritis. The endometrium is most apt to be affected in connection with some other lesion which requires treatment, as is evidenced by the comparative frequency with which endometritis is found associated with a diseased cervix or fibroid tumors or pelvic inflammatory disease. Even in cases of retroposition in which the patients complain of a discharge the endometrium is normal in a large proportion.

The practical conclusion to be drawn from this analysis is that one must be very guarded in promising a patient that a given uterine discharge will be cured by a curettement. Furthermore, the non-operative treatment of leucorrhea by the direct application of antiseptic or caustic solutions to the uterine cavity is almost never justified. Such a plan would, as we have indicated, be useless in half of the cases, even though none of the dangers incident to a proceeding of this sort made themselves manifest. The treatment of endometritis by intrauterine applications of formalin, so fully described by Menge[7] several years ago, can surely never find a place in the therapy of a general practitioner, and never in the hands of a gynecologist, unless the patient is under ether and the cervix has been dilated.

A chronic discharge from the uterus which is dependent on pelvic disease usually requires more than a curettement or intrauterine applications. In the case of a uterine discharge for which no pelvic origin is apparent, general tonic and hygienic treatment should be given a fair trial before resorting to curettement or to any intrauterine manipulations.

1819 Chestnut Street.

7. Die Therapie der chronischen Endometritis in der allgemeinen Praxis, Arch. f. Gynäk., lxiii, 1 and 2.

**Metabolism During Courses of Mineral Waters.**—G. Rem-Picci published in the *Policlinico*, July and August, 1907, a series of researches on the metabolism during ingestion of various mineral waters. The data presented seem to show that the mineral waters have an unquestionable action on the cells, stimulating them and favoring expulsion of waste, especially the elimination of nitrogen and uric acid. This stimulating action occurs on ingestion of even a moderate quantity of the water, and it is not necessary to drink excessive amounts. The stimulating effect soon wears off, consequently the course of mineral waters should be brief, and resumed after an interval, if desired.

## DELIRIUM DURING AND AFTER TETANUS.

CHARLES W. BURR, M.D.
Professor of Mental Diseases in the University of Pennsylvania.
PHILADELPHIA.

Serious mental symptoms of any kind rarely occur during or after an attack of tetanus. In the great majority of cases consciousness remains unclouded, judgment fairly clear, memory good and the moral sense normal, until the end or very near the end. Emotional control, when we consider that almost always the patient, if an adult, knows he is suffering from a very serious disease, is usually better than would be expected. When, then, mental symptoms do occur, three questions arise: (1) Is the abnormal mental state a mere accidental complication, merely happening at the time of the tetanus and in no way caused by it? (2) Is it due to the medication employed? (3) Is it the direct result of the exhaustion produced by the disease or a result of a secondary intoxication set up by the primary intoxication of the tetanus bacillus?

In certain of the acute infectious fevers, for example, typhoid, pneumonia and smallpox, in addition to the febrile delirium which is very common, a confusional state, followed by death, recovery, or permanent dementia, occurs frequently enough to make mere accidental coincidence impossible. The confusion is most likely due to the exhaustion from the disease, though it is possible that it may be due to secondary perversions of the chemistry of the body, caused, primarily, by the toxin of the infection. The symptoms are the same whatever acute infectious fever the patient may have had. A similar confusional state sometimes occurs during pregnancy and after parturition.

These mental sequelæ are so well known that they do not need discussion. They, and delirium during the attack, are, however, very rare during or after tetanus. I have seen delirium in only three patients in a quite large number of cases. In one case I am not sure that the mental symptoms were not caused by the bromid and chloral used; in another, I believe the previous abuse of alcohol was a large causative factor, while in the third I can find no cause save exhaustion and the influence of fever in a susceptible person.

CASE 1.—The patient, a negro, 30 years old, was admitted to the Philadelphia General Hospital, June 6, 1898, complaining of stiffness of the trunk and legs, and attacks of colicky pain at the pit of the stomach, coming on about every half hour, and lasting a few minutes. His previous history had been uneventful, except that he had had gonorrhea one year before admission, and that a urethral discharge had reappeared ten days before admission. There was no history of any accident, but his feet, which were far from clean, were covered with many superficial scratches and cuts in all stages of healing. He stated that three days before coming to the hospital he noticed, on getting out of bed, that his legs were stiff, and that he could walk only with difficulty. He tried to overcome the stiffness by walking, but that made it worse. He returned to bed, and as the day passed, the rigidity became more marked. About 3 o'clock in the afternoon, the first attack of epigastric pain occurred, accompanied by great dyspnea. The next day, the rigidity of the legs was so great he could scarcely walk. By this time his back also had begun to be stiff. He did not notice any stiffness of the jaw until his admission to the hospital.

*Examination on Admission.*—He was a well nourished, muscular negro. His facial expression was anxious, but he showed no mental symptoms of any kind. The thighs and legs were rigidly extended. There was slight opisthotonos. The abdominal muscles were rigid. The jaw was, at this examination, free, except that whenever there was a sudden increase in the

tonic spasm of the legs and trunk it also became involved. The arms were entirely free until two days later. The increase in the tonic spasm was always accompanied by sudden and severe pain, referred by him not to the recti abdominalis muscles, but to the stomach itself. He was supersensitive to touch, except on the arms; or rather a touch anywhere on the affected parts would instantly cause a severe, painful tonic spasm. He was, of course, entirely unable to walk. The pulse varied greatly. In the intervals between the paroxysms, it was full and strong, during the paroxysms weak and rapid. Physical examination of the chest revealed nothing. A yellow, creamy discharge, containing gonococci, exuded from the urethra. As a mere touch on the skin produced a paroxysm, no attempt was made to determine the condition of the reflexes.

He slept very little throughout the night, and had three very painful paroxysms, each lasting about five minutes. During the paroxysms there was marked dyspnea, the pulse was rapid, and the skin became bathed in a profuse cold sweat. The temperature ranged from 99 to 100 F. By the next morning spasmodic retention of urine came on. On the ninth day of his illness he began to be delirious. At first the delirium was very slight, and he could be recalled momentarily to himself without difficulty, but after some hours he became wildly delirious. He yelled and shouted, seemed to see fleeting objects, and paid no attention to anything said to him nor to what was going on around him. The pain from the paroxysms seemed to have increased greatly. Delirium and the tetanic spasms continued until death, on June 16. During his entire stay in the hospital, there was an irregular but gradually rising fever. For the first four days it hovered around 100 F., falling twice to normal for a couple of hours. It then hovered around 102 F., several times rising to 103.8. At death it was 102.2.

Postmortem examination was negative. Gross examination of the brain and cord showed nothing abnormal. There was no active congestion. No lesion of any kind was found in the abdominal and thoracic viscera. Nothing was found to account for the fever which must have been caused by disturbance of the nervous heat regulating apparatus.

The delirium in this case was probably caused by the fever and intense pain of the muscular contractions, as well as by the exhaustion due to the disease in a person susceptible to mental breakdown. The relation of fever to delirium is very interesting. Of course, in children it is very common for even slight fever, lasting only a short time, to produce delirium. In adults, slight fever, as a rule, causes no mental symptoms, unless it lasts many days, when delirium may occur with or without stupor. In some people, however, a very moderate fever, say of 99 or 100, may be a distinct cerebral stimulant and a higher temperature may cause wild delirium. Thus, I know a clergyman whose best sermons are those written when in the early stages of a mild influenzal attack—a disease to which he is subject. His sermons are, however, emotional and artistic rather than intellectual. I have never seen power of pure reasoning increased by fever. I know another man, a very successful worker in one of the industrial arts, who becomes mildly and, as he says, pleasantly delirious so soon as he has any fever at all. Others of my acquaintance become dull, stupid and somnolent, without any delirious stage whenever fever comes on. I am speaking of the slight transitory fever which accompanies mild ailments and not of the serious long continued fever of typhoid or pneumonia.

What it is that determines the mental effect of fever is unknown. It is not a question of mere nervousness. I have known many nervous and apparently mentally unstable women who were not affected by slight febrile attacks at all.

CASE 2.—The patient, an Italian laborer, 33 years old, was admitted to the insane department of the Philadelphia General Hospital, Dec. 9, 1907, with the following history: in October, 1907, he sustained a compound fracture of the great toe of the left foot. Nineteen days after the injury he began to complain of inability to open the mouth and of great muscular rigidity. Five days later he was taken to one of the city hospitals. On admission, there were marked symptoms of tetanus, general muscular rigidity, tetanic convulsions, opisthotonos and the sardonic smile. Within two days he was given 64,000 units of tetanus antitoxin, and over 300 grains of sodium bromid. He became much better, apparently, and then relapsed and was given carbolic acid hypodermatically, and large doses of bromid and chloral.

Ten days after admission all symptoms of tetanus disappeared, and he seemed to be convalescent, but on the thirteenth day (three days after all medication had been stopped) he became violent and delirious, and had to be physically restrained. He muttered and yelled, struggled, refused food and medicine, was angry and destructive, thought the attendants and doctors were trying to poison him, and believed the roof of the room was about to fall on him. After the delirium had continued thirteen days, he was sent (Dec. 9, 1907) to the insane department of the Philadelphia General Hospital. During his stay in the other hospital bromid and chloral were used continuously and hyoscin occasionally for many days.

On admission to our wards he was stupid and confused. He improved rapidly, all medicine having been stopped, and by December 27 he showed no evidence of mental illness. He remembered the accident, and a great deal of what passed through his mind during the period of delirium. He remembered that he thought he saw people being burned and getting killed, that he heard voices saying to him, "When will you die?" "I am going to kill you," "To-morrow you shall die." He remembered being taken to the two hospitals, but could not remember when he had been taken to either of them, nor how long he had stayed in them. He realized that he had been mentally ill and that the voices and visions were the result of disease.

I feel sure that in this case the mental symptoms were in no way due to tetanus, but were the result of the heroic doses of bromid and chloral in a susceptible person.

CASE 3.—The patient, a laboring man, 26 years old, was admitted to the Philadelphia General Hospital Jan. 15, 1907. He had been a hard drinker for several years, and smoked two or three packages of cigarettes daily. One year previously he had had an attack of delirium tremens. On admission he was clear mentally. He stated he had been employed in a stable and drove a mill team. He knew nothing of any wounds, but his feet had many recent scratches. On Jan. 4, 1907, he noticed some soreness of the jaws, and gradually increasing stiffness in them. After a few days he could scarcely separate the jaws. He could swallow liquids easily, but could not chew at all. Barring a slight indistinctness from inability to open his mouth, speech was normal. He could move the eyes well, but there was some tonic spasm of the orbicularis palpebrarum. He had a drawn, anxious look, but there was no retraction of the corners of the mouth. He complained of pain in the back only. His neck and arms were stiff, and though he said his legs felt stiff, rigidity was not demonstrable in them. The tendon reflexes were quicker than normal, and there was a tendency to ankle clonus on both sides. The Babinski reflex was absent. He could not void urine at will, but did so spasmodically. After a day or two the muscular rigidity extended and increased. He also became obstinately constipated and complained of epigastric pain.

Five days after admission he became surly and quarrelsome, and four days afterward began to be delirious and have visual and auditory hallucinations. He had no idea of time or place, was much confused, talked ramblingly, and complained of seeing faces and lights. He had to be restrained. He was transferred to the insane department on Feb. 1, 1907. After a week or ten days, his mental symptoms passed off and, barring physical weakness, he was well. The physical signs of tetanus had ceased a little before the time he was sent to the insane department. On Feb. 28, 1907, he was discharged well. He had no fever throughout the course of his illness. The tetanus itself was very mild.

The man was of an unstable mental type; not at all alert, emotionally very weak, had little power of self-control and was a victim of alcohol. I think any stress at all would have been sufficient to upset for the time being his mental equilibrium and in that sense the tetanus was, I have no doubt, the cause of his delirium, but I do not think it was the one specific cause needed. Any other sudden stress would have been as efficient.

1327 Spruce Street.

## A TYPHOID FEVER EPIDEMIC FROM INFECTED MILK.

CHARLES NAHUM HASKELL, M.D.
BRIDGEPORT, CONN.

During August and September, 1907, there occurred in Bridgeport, Conn., thirteen or more cases of typhoid fever originating from a common source. The features in connection with this epidemic which seem worthy of general consideration are: (1) The importance of investigation, on the part of health authorities, of every case of typhoid fever reported to them; (2) the desirability of examination by attending physicians of blood and excreta in doubtful cases of this disease; and (3) some facts concerning the Widal test and dissemination which are sometimes overlooked.

On September 14 I attended a patient presenting the classic symptoms of typhoid fever. Inquiry developed the fact that there were four or five cases in the immediate neighborhood, all partaking of milk from the same dairy. It has never been the custom of our local health officers to investigate the source of typhoid fever, so that, while the cases mentioned had been reported to the health board by the attending physicians, the common source of the trouble remained unrecognized.

A list was procured of cases reported to the local health authorities, twenty-seven in all, and with the cooperation of the milk inspector and the various attending physicians, each case was carefully investigated. Thirteen positive cases and two doubtful ones, out of the twenty-seven had consumed milk sold by one dairyman. Four patients had eaten clams from a common source. Two of the four died; the other two cases ran mild courses.

Of the thirteen positive cases typical clinical manifestations were present in all; Widal reaction present in eleven; not tested in two. There was one death, eight patients were severely ill, and the remaining cases ran mild courses.

The dairyman, an ordinary vender of milk, was not a producer but a middleman, procuring his supply from no less than nine different sources within a radius of fifteen miles. Each source was carefully investigated. Histories of any illnesses in the various families and former tenants were carefully considered. Premises and methods of handling milk were inspected. Several specimens of blood and well-water were procured and examined. Results were negative in all but one instance.

George C., occupying since April 1, 1907, a rented farm ten miles distant from this city, was supplying eighty quarts of milk a day to the middleman. The cow stables were in poor condition. The outhouse and sink drain were within a short distance of the well. Well-water, without previous boiling, was used to wash the milk cans. No means were at hand to sterilize milk receptacles. Those milking the cows and handling the milk used no special precautions regarding personal cleanliness.

Mr. C.'s family consisted of himself, his mother, a younger sister and two children—a boy of 4 years and a girl of 3. Another sister had been visiting there for a month. Mr. C.'s brother, together with the latter's wife and her mother, from Massachusetts, had visited there early in the season. Three farm hands had been employed there. Two boys from Bridgeport had boarded there during July and August. The 4-year-old boy, George Jr., was recovering from a recent illness. A near-by physician had seen him once. He had not examined the boy, no diagnosis was made and, his services being unsatisfactory, a physician was called from a neighboring town. The father stated that the last-named physician pronounced the case one of typhoid fever.

The various members of the family and former employés were questioned carefully regarding previous illnesses. No history of typhoid fever or any condition resembling it could be determined. Specimens of blood were taken from each member of the family and the former employés referred to, with one exception, and were examined by a local bacteriologist of recognized ability.

The Widal test was positive in the case of Mr. C.'s mother, the 4-year-old boy and the 3-year-old girl, the latter ailing at the time but not confined to bed. A specimen of well-water showed the presence of colon bacilli.

The two boys living in Bridgeport, who had boarded at the C. farm during July and August, were next sought. The younger of the two, Charles S., one of a family of six, gave a negative Widal test, as did also the other five members of his family. The other boy, James B., aged 14, gave a most positive Widal reaction. Repeated examinations of his blood were made with uniform results. Through the cooperation of the health officer of Enfield, Mass., specimens of blood were obtained from Mr. C.'s brother, the latter's wife and her mother, and in the case of Mr. C.'s brother the Widal was positive.

Here, then, were no less than five persons who had been members of the C. family and had visited or lived varying lengths of time on the farm, whose blood responded in a positive manner to the Widal test, and some of whom were possibly excreting typhoid bacilli in both the feces and urine.

Those coming in direct contact with the milk were Mr. C., his mother and the two boys from Bridgeport. They milked the cows, stirred the milk with a stick, and drank the milk from a cup, repeatedly dipped into the cans without intermediate cleansing. Much earlier in the season the three farm hands referred to had done the milking. Mr. C.'s brother from Massachusetts and the two children at the farm had not handled the milk in any way.

Had Mrs. C., the mother, a woman of 68 years, at some remote period, suffered from typhoid fever and become a common carrier, awaiting an opportunity such as is afforded by the handling of milk to disseminate the germs of the disease? An investigation of her previous environment was made. She had lived and acted as cook and housekeeper in the following named places: a dentist's family in a neighboring town in this state; the home of a relative in Smiths, Mass.; a private family in North Adams, Mass.; a normal school in North Adams, Mass.; a small hotel in Whitingham, Vt. Replies to letters of inquiry stated that previous to, during and subsequent to her stay at these places no cases of ty-

phoid fever or any disease resembling it had developed. This negative information rendered less probable Mrs. C.'s capacity for disseminating the disease. The two younger children, who evidently suffered a mild infection, in common with their grandmother, had, presumably, contracted it from a common source.

Investigating more carefully the case of James B., it was found that he, in common with two or three other members of his family, had suffered a year or more ago from an illness of several days duration, which was regarded as malaria. The boy's mother responded to the Widal test. The conditions about the house, just outside the city limits, were bad. The well-water contained the colon bacillus. It seems quite probable that various members of James B.'s family suffered a typhoidal infection of mild type, which was mistaken for malaria, and that James became an unconscious disseminator of the disease.

The sale of milk from the George C. farm was stopped by the proper health authorities, and after two or three weeks the epidemic ceased. For practical ends the investigation was sufficiently complete. From a scientific point of view much was left undone.

The first case in this series was reported late in August. It was two weeks or more later when the investigation was begun. It was several days later when the case which terminated in death was reported. It is possible that the immediate inspection of each case would have suggested the common source of all the cases, and thus much suffering and one fatality might have been averted.

Correspondence with thirty-five cities throughout the country, having populations approximating that of Bridgeport, elicits the fact that thorough methods of investigation by health authorities obtain in about 75 per cent. The percentage should be 100.

Many cases of typhoid fever of mild type are never recognized. The responsibility assumed by attending physicians in omitting the Widal test and blood counts in doubtful cases is not justifiable. The typhoid bacillus is regularly present in the gall bladder and may persist for weeks, months or even years. This explains why some apparently healthy persons are unconscious harborers and disseminators of the typhoid bacillus. It is thus that these individuals spread the infection and sometimes give rise to more or less extensive epidemics.

The agglutination reaction is present in about 95 per cent. of all cases. Intermittence of the reaction is common, therefore repeated examinations should be made when necessary. The idea that a few individuals enjoy a natural immunity and give a positive Widal reaction without having had typhoid has given way to the more practical one, that such persons have at some period suffered an infection which remained unrecognized.

The cases of acute or chronic jaundice and Weil's disease, presenting high agglutinative power, are doubtless due to previous typhoidal infection of the biliary tract, and resulting cholelithiasis, cholecystitis, or cholangitis. When the agglutination test is properly conducted, however, the fallacies are inconsiderable and do not seem worthy of serious consideration, with the possible exception of some cases of tuberculosis, in which, it is claimed by some, a more or less atypical reaction is found, even in high dilutions. No absolutely reliable information is at hand regarding this point.

In view of the fact that the agglutination reaction is a delicate one under any circumstances, it is quite essential that the bacteriologist employed to make the Widal test be skilful, painstaking and sincere.

In conclusion, a plea is made for more careful examination of patients, especially with reference to the Widal test and blood counts, when typhoid fever is a possibility; for more vigilance on the part of health authorities in preventing epidemics and for the employment of more skilful technic in municipal laboratories.

---

## REMOVAL OF A SUBCORTICAL CYSTIC TUMOR AT A SECOND-STAGE OPERATION WITHOUT ANESTHESIA.*

H. M. THOMAS, M.D.
Clinical Professor of Neurology, The Johns Hopkins University.
AND
HARVEY CUSHING, M.D.
Associate Professor of Surgery, The Johns Hopkins University.
BALTIMORE.

### *NEUROLOGIC REPORT BY DR. THOMAS.*

*Patient.*—R. C., aged 32, unmarried, a teacher and farmer by occupation, was referred to the neurologic department of the Johns Hopkins Hospital Dispensary, Nov. 1, 1905, on account of the nervous symptoms which were associated with his ocular condition, by Dr. M. B. Kelly of the Baltimore Eye, Ear and Throat Hospital. He was admitted to Ward F in the service of Dr. Barker, Oct. 24, 1906, and was transferred to the surgical side for operation a month later.

*Family History.*—His father died of dysentery and his mother of diabetes. He had also lost two brothers and two sisters; one sister from tuberculosis, the others from acute illnesses. An aunt and uncle on his mother's side also died from tuberculosis. There was no history of tumor.

*Personal History.*—The patient had diphtheria at the age of fifteen, but had suffered from no other serious illness. When nine years of age he had a slight injury to the top of his head; he was not rendered unconscious, nor were any bad effects noticed. In 1892 he received a blow from a baseball bat, which fractured his nose. His habits had been excellent. He used no alcohol nor tobacco and led a hygienic life, working on a farm, studying and teaching. He denied venereal exposure, and there was nothing to suggest the possibility of infection. The patient was in excellent health up to the beginning of his present trouble.

*Present Illness.*—In 1895 or 1896 he began to suffer from curious nervous attacks, which came on without cause. The first attack was characterized by an odd sensation in his head, which suggested to him "the bursting of bubbles in rising dough;" at the same time there was a noticeable twitching in the muscles of the left calf. There was no loss of consciousness and the seizure lasted but a few minutes. Recurrences of these attacks followed, with about a month's interval; they were very constant in character. The first intimation of their occurrence was an indefinite, nervous feeling in the head. This was associated with a tingling sensation, starting at the left knee and usually spreading up the leg on to the body, in severe attacks even to his thorax and left arm; at times, however, the sensation passed in the other direction, namely down the leg to the foot. Many of the attacks consisted simply of this sensory discharge, which might continue for several minutes, but if the sensation was of longer duration muscular twitchings were superadded. These also started in the left leg, usually in the muscles of the calf, at times in the thigh; they likewise tended to spread up the left side of the body, on a few occasions as far as the arm.

Following these seizures a peculiar numb feeling remained in the areas involved; but he said there was no actual loss of sensation except on a few occasions, when it seemed as though

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

he had "lost his left leg and was standing on one foot." Once after his admission to the hospital he was examined directly after an attack, and no sensory loss could be objectively determined. Consciousness was nearly always completely retained, and although the patient felt nervous and badly, he could usually continue with what he was doing. During July, 1900, he had three very severe fits with loss of consciousness; and while under observation in 1906 he had three similar, though less violent, attacks. Hence, up to the time of his first operation, November 22, 1906, he had lost consciousness six times only, whereas during the ten years since the onset there had been several hundred minor seizures without loss of consciousness.

Though nearly always in the leg, the initial sensory discharge began elsewhere on several occasions—for instance, in the left groin, or on the thorax just below the left scapula, or in the shoulder. The seizure was not uncommonly followed by profuse sweating of the leg and foot.

The patient had been subject to headaches from childhood; but they became more severe after the onset of these attacks. He suffered intensely from them for a period of three months early in the year 1903, when they showed marked periodicity, beginning about 3 o'clock in the early morning and lasting until 11. The pain, which was severe enough to require morphin, seemed to pass from one temple to the other; it was associated at first with a ringing noise. After their daily recurrence for three months, the headaches suddenly disappeared, and since then he had had no pain to speak of—that is, since May, 1903.

This period of intense headache was ushered in by definite ocular symptoms—namely, by momentary attacks of blindness, followed by diplopia for two or three days. At this time his vision failed so rapidly that in three or four months he could no longer read ordinary printing. He said there had been very little change in his sight since then, although it might have become gradually worse. He had vomited on a few occasions only, usually during an attack.

His seizures had continued over a considerable period before there was any permanent muscular weakness. In the early part of 1903, at the time of his intense headaches and loss of visual acuity, there seems to have been a period of disability of the left arm. This came on gradually, lasted for five or six months and then disappeared. Shortly after this, in July, 1903, the left leg appears to have become permanently weak and he has walked with a slight limp ever since. When the patient first came to the dispensary, in November, 1905, he complained chiefly of loss of vision, weakness of the left leg and general nervousness, and said very little of his attacks. It was only after we had seen him for some time that he began to complain of them. He was thoroughly examined on numerous occasions and the objective findings remained practically constant during the year he was under observation. A brief summary of these examinations is as follows:

*Examination.*—The patient was an intelligent man and gave a remarkably clear, detailed and consistent description of his seizures. Dr. James Bordley, July 1906, reported that there was atrophy of both optic nerves, due he believed to preceding choked discs. The vision was R. 7/20; L. 20/20, and there was some constriction of the visual fields, particularly for colors. The pupils were normal in size and in their reaction to light and accomodation. There was no abnormality noted in the function of the other cerebral nerves. The movements of the arms were free and the muscular strength was practically equal. The patient walked with a distinctly hemiplegic limp on the left side, and there was a slight, but definite, weakness in the dorsal flexion of the left ankle and possibly some in the flexion of the knee and hip. The left leg was appreciably smaller than the right. The deep reflexes in the arms and right leg were normal; they were exaggerated in the left leg, where a patellar clonus always, and an ankle clonus usually, could be obtained. Plantar stimulation on the left side usually led to dorsal flexion of the great toe; on the right side no response could be obtained.

Sensation seemed to be normal over the left arm and hand. It was tested repeatedly and carefully in all its qualities, particularly in regard to muscular sense and the power of recognizing objects placed in the hand. Letters cut from wood were read accurately when placed in this hand. The sensitivity of the leg and foot was tested with equal detail, without discoverable abnormality. The power of localization was usually excellent, but at times there appeared to be some slight defect; this was too inconstant, however, to be recorded. In testing the muscular sense a lever was attached to each great toe, so that very delicate movements of the joints could be made; changes of position were recognized as well on the left as on the right side. Various weights were placed on the levers and these were also equally well appreciated on the two sides. Different textures, as rubber, cloth, wood, etc., were recognized by passing his left foot over them. Objects, however, such as a nailbrush, book, etc., were not well recognized by either foot. The patient was allowed to feel raised wooden letters about 10 cm. in length, by passing the foot over them. This test was indefinite, although the answers given were more correct when using the left foot; he did, in fact, recognize several letters so placed.

*Diagnosis.*—It was evident that the patient was suffering from an organic lesion situated in the upper part of the Rolandic region, involving the cortex itself or lying just below it. The fact that the seizures were so largely sensory in character pointed to the post-central convolution as their place of origin; but as definite, though slight, paralysis of the left leg occurred, we were led to the conclusion either that the pyramidal fibers coming from the leg areas were also involved in the process, or else that it had implicated the anterior central convolution. The condition found in the eyegrounds, taken with the history, was sufficient to indicate the presence of a cerebral tumor; but inasmuch as the patient had had none of the general pressure symptoms of a brain tumor for three years, and as there had been no increase of the paralysis during that time, we concluded that the growth must have become quiescent. As to its character there was very little data on which to base a conclusion. Syphilis could be excluded, but the family history and the general appearance of the patient himself suggested the possibility of a dormant tuberculous process; and this was the tentative diagnosis.

*First Operation.*—The surgical exposure of the area which we believed to be involved is difficult and dangerous. This was explained to the patient, but as he had come to dread his attacks so greatly he was willing to take any risk and begged for the operation. After consultation with Dr. Cushing this was decided on, and the first operation was performed November 22, 1906. The interesting surgical experiences I shall not dwell on, as Dr. Cushing will deal with them. The leg area of the central convolutions on the right side was exposed and stimulated, but nothing abnormal was apparent on the surface.

After this series of operations the attacks subsided for about eighteen days, when they again recurred. They were at first slight, but through January, 1907, they became more and more severe, consciousness being lost in a number of them. After one particularly severe attack on February 7 the left arm became helpless and a slight weakness appeared in the left side of the face. A detailed examination a few days later revealed the following positive findings:

*Second Examination.*—There was a slight left-sided facial paresis; marked weakness of the movements about the left shoulder; nearly complete paralysis of the movements of the left elbow; practically complete paralysis of the movements of the left wrist and hand. The left leg was in the same condition as before the operation. The deep reflexes were active and about equal in both arms; they were, however, exaggerated in the left leg. Plantar stimulation of the left side gave, as before, dorsal flexion. No abnormality of sensation could be determined on the face; touch, pain and temperature were as well perceived over the left arm and hand as over the right. Muscular sense, or more properly the sense of position, was definitely affected in the left hand and wrist. The power of localization on the dorsum of the left hand was somewhat affected; this was tested in considerable detail in the endeavor to confirm the interesting findings of Russell and Horsley, but the errors showed no constancy. Large objects placed in the left hand,

with the fingers closed about them, were usually recognized and correctly named. I was unable to demonstrate any noticeable change of sensation in any of its qualities over the left leg and foot.

The patient had an irregular rise of temperature, and the condition of his lungs had given the staff some anxiety; furthermore, the fact that he had proved such a poor operative subject made us hesitate to recommend further procedures, especially as it was now nearly certain that the lesion was subcortical. His condition, however, being so desperate and pitiful, Dr. Cushing operated again March 21 and 26. This second-stage operation, at which a cyst was found and removed from the upper part of the post-central convolution, was done without anesthesia. The procedure was suggested by Dr. Cushing on account of the previous difficulties of anesthetization. and its success was entirely due to his initiative and skill. He will give the details of the operation.

June 6, 1907: Since the operation the patient had not had a single attack, although he had at times felt nervous and had dreaded the onset of the seizure. The weakness of the left arm had almost disappeared and the sensation in it was quite normal. He localized touch on the dorsum of the hand accurately; was able to name objects placed in his left hand and to read the wooden letters by feeling them. His muscular sense was nearly normal. The spasticity of the left leg remained unchanged; indeed, the condition of this leg had not altered since we first saw him, now nearly two years ago.[1]

## COMMENT ON THE NEUROLOGIC REPORT.

For the purposes of the present article it is inappropriate to touch on more than one or two of the interesting points which this patient's history raises for discussion. The local diagnosis offered no particular difficulty. The character of his many attacks, lasting over a number of years, was so constant, and the description given was so detailed, that one could not escape the supposition of an irritative lesion in the upper part of the Rolandic region, and the history and the condition of the eyes pointed to a process which once, for a short period of time, had produced increased intracranial pressure, followed by a long quiescence.

The nature of the lesion was not so clear, although the most reasonable belief seemed to be that there had been at some period a new growth which in 1903 had grown rapidly or possibly had had a hemorrhage into its substance and then had ceased to increase in size and had become quiescent.

When one endeavors to bring the clinical symptoms into line with the operative findings it seems remarkable that, with a tumor situated in large part in the post-central convolution and involving a considerable portion of its superior part, there was practically no objective sensory loss. I think it may be fairly said that before the first operation, even after numerous and thorough examinations, no definite objective sensory disturbance could be detected. The tests were particularly devised to estimate the power of localization and the power of recognition of objects felt. It is true that after the patient's left arm had become paralyzed (Feb. 7, 1907), subsequent to the severe convulsion of that time, there was a marked loss in the muscle sense and in the power of locating cutaneous stimuli. The errors in localizing a touch on the back of the hand varied so much, both in extent and in direction, that it was impossible to formulate any rule in regard to them.

It is interesting in this connection that at the operation nothing was found that could account for this sudden increase in the paralysis of the left arm, and one is led to wonder if it were not due to the change of the direction of the pressure brought about by the surgical procedure. That is was due to no permanent destruction of nerve tracts is shown by the fact that the motor weakness largely disappeared and the sensory loss has entirely been restored since the removal of the cyst.

The unique feature of the case, and the one which particularly justifies its presentation at this time, is the fact that it demonstrates that both dura and brain can be manipulated without causing any pain to the thoroughly conscious patient. Although we knew that the brain substance itself is insensitive to pain, we had no reason to doubt the truth of the opinion held by physiologists that the dura is a highly sensitive tissue; and I must admit being surprised when Dr. Cushing was able to incise the membrane without the knowledge of the patient.

The question whether irritation of the cortex causes pain or any other sensation has interested physiologists ever since the time of Haller. This investigator, as Sir Michael Foster[2] tells us, concluded "that the cortex of the brain must also feel, though no movement results when it is irritated." Sherrington[3] refers to the experiments of Schiff and Budge carried on about the middle of the last century to determine what parts of the nervous system gave evidences of pain when stimulated. Budge got no evidence of painful reaction from the cerebral hemispheres, including the corpus striatum. The optic thalamus gave doubtful responses. Evidences of pain were elicited from the corpora quadrigemina, and likewise below this level, unless the irritation was confined to the gray matter. Both of these investigators believed that the gray matter itself was entirely insensitive.

Since these experiments there appears to have been very little work done to determine this point, but the numerous experiments in which the faradic current was used to stimulate the cortex and in which the response was determined by muscular movements have abundantly proved that the cortex does respond to appropriate stimuli. These experiments, carried out on animals and on man, rendered unconscious by anesthesia, of course, gave little or no evidence as to the sensory response to such irritation.

We know, however, that sensory phenomena often follow irritative lesions of the cortex, the present case proving a most excellent example. Irritation of the centers for the special senses also at times gives appropriate responses; this is well illustrated by the gustatory and olfactory sensations in the uncinate gyrus group of fits, and by the subjective visual and auditory phenomena which are at times observed in diseases of the central cortex. It is, however, quite remarkable that pain is not more often complained of, even when there may be an intense sensory discharge. Our patient described the sensation as being painful in only one or two of his many attacks.

Many surgeons, as is well known, have noticed the insensitivity of the cerebral tissue during surgical dressings and occasionally during operations, and Sir Victor Horsley has called attention to the fact that profound anesthesia is only necessary during the early and late

1. December, 1907: At the present time, six months later, he reports himself to be in excellent physical condition. He has had an occasional slight sensory aura, described as a transient numbness of the ulnar side of his left hand, followed by a momentary twitching of the little and ring fingers. The old sensation in the leg has disappeared. His weight has increased to 170 pounds. The movements of the arm are steadily improving, and he uses his hand and fingers freely. He still walks with a hemiplegic spasticity which, however, seems to be constantly lessening.

2. Lectures on the History of Physiology, etc., Cambridge, 1901, p. 294.

3. Shäfer's Text-Book of Physiology, 1900, vol. ii, p. 978.

stages of an intracranial operation, namely, when the scalp and cranium are opened and when the wound is closed.

Although from these things we had a right to conclude that the cortex could be manipulated without pain, it was a startling thing to see the postcentral convolution—that part of the brain which is now generally believed to be particularly concerned in the perception of sensory impressions—painlessly incised and a tumor enucleated from its depth. This was done, too, without causing the patient the least sensation of any description, though it required the cutting across and the breaking of many fibers, as well as the irritation of the gray matter. One slight seizure occurred while the cortex was being palpated but before it was cut.

It is probable that the operative stimulus was inadequate and that had we faradized the cortex we would have obtained some most interesting data. That the manipulations were accompanied and followed by no shock or observable phenomena of any kind is also of interest. If it is possible, as it seems to be, that a similar procedure can be carried out in other cases it will open up a field of investigation that has very wide limits, and it is largely for this reason that we desire to record this case at this time.

### *SURGICAL REPORT BY DR. CUSHING.*

Well aware of the inaccessibility of the mesial edge of the paracentral convolutions, underlying as they do the lateral expansions of the longitudinal sinus (*Lacunæ laterales*), Dr. Thomas did not feel that he could strongly advise operation, nor did I undertake it without considerable misgivings. Had we been aware of the difficulties which would be experienced in giving anesthesia to the patient, and could we have foretold the vicissitudes that we were to meet, we would have had additional reasons for hesitation. It will be seen that five craniotomies were necessary before the end of his surgical history, and it may be well to take these up seriatim with a brief description of each operative stage and its various complications.

#### OPERATIVE HISTORY.

*First Operation.*—Nov. 22, 1906 (10 a. m.). Under ether anesthesia a large bone flap, whose upper margin nearly reached the sagittal suture, was reflected so as to bring the sulcus centralis (Rolandi) in the center of the exposed field. Although, as is usual in these cases, the services of an expert professional anesthetist were secured, the patient took the anesthetic execrably, breathing badly throughout its administration. The resultant cyanosis was so great that in spite of the tourniquet there was considerable venous oozing, not only from the scalp but from the diploë as well. Bleeding was particularly free from the emissary vessels betwen dura and bone, especially from those at the edge of the parasinoidal sinuses which were exposed owing to the mistake in judgment of placing the osteoplastic flap so high. The accompanying sketch (Fig. 1) shows roughly its situation.

Although I am loath to believe that a two-stage operation is desirable as a routine measure in operations for brain tumors, it seemed unwise in this particular instance to proceed, owing to the considerable loss of blood and resultant fall in blood-pressure. The opening of the dura consequently was deferred for a second sitting; the bone flap was replaced and the scalp wound closed without drainage. I confess to having felt much hesitation in thus closing the wound, inasmuch as there was some uncontrolled oozing from the dura at the superior edge of its exposed surface, where, owing to the cyanosis and passive congestion, bleeding slowly continued at a few points. Nevertheless, it was hoped that on recovery from the anesthetic, with an improved circulatory condition, this venous oozing would cease and that the pressure of the bone flap against the membrane would meanwhile suffice to occlude the bleeding points.

Realizing, however, that the oozing might continue, a blood-pressure apparatus was in constant use during the remainder of the day and night so that the systolic pressure as well as the pulse rate was frequently recorded and charted. Four hours after the operation the patient was fully conscious, conversing, and free from any intracranial discomforts.

He passed a comfortable night, sleeping possibly more than might have been expected, but not until the early morning hours was there evidence of anything unusual in his condition. At 5 a. m. his pulse, which had been about normal, dropped to the 60s; two hours later it registered as low as 54. He seemed unduly drowsy.

When I saw him at 9 a. m. it was difficult to arouse him, though when aroused he said that he felt comfortable and free from pain. His pulse continued slow; the blood-pressure had begun to rise; and there were present, even to the palpating finger, distinct rhythmic waves, not only in cardiac tension, but in pulse rate as well; these waves furthermore were accompanied by perceptible alterations in the depth of his respiration. An ophthalmoscopic examination, confirmed later by Dr. Bordley, showed a high grade of choked disc, the edema being so great, even on top of the atrophic nerve-heads, that it measured four diopters (it is to be remembered that before the operation there was no retinal edema whatsoever). Dr. Eyester, whose recent observations have thrown light on the physiology of Cheyne-Stokes respiration,[4] made at this same time some records with the Erlanger sphygmomanometer, which showed more clearly than could otherwise have been observed the characteristic rhythmicity of pulse rate, blood-pressure and respiration, which occurs when intracranial pressure is approaching Kocher's third stage of compression (Höhestadium des Hirndruckes).

On the presumption that an extradural clot had formed, preparations were made to partially reopen the wound. This measure, however, was unavoidably delayed until three hours later—namely, eight hours after the first onset of symptoms.

*Second Operation.*—Nov. 23, 1906, (12 noon). The patient by this time had become so profoundly unconscious that he failed to respond even to painful stimuli. He was taken to the operating room; the dressing was removed; the sutures holding the anterior edge of the incision were divided. No sooner was this done than the bone flap dislocated itself outward, separating the freshly uniting skin incision, and a large, black extradural clot, fully 3 cm. in thickness, began to extrude itself from the wound. The patient immediately regained consciousness, opened his eyes, looked up and spoke to the operator. The blood-pressure soon fell to its normal level, the vagus pulse was replaced by one of normal character and rate, and the rhythmicity of respiration disappeared, all with the definiteness of a laboratory experiment when a compressed brain has been relieved from the pressure exerted against it. The clot was scraped away; the partially reopened wound was filled with iodoform gauze; the patient was returned to his bed. He had no further pressure symptoms. In a few hours the edema had begun to leave the retinæ, and by the second day afterward the atrophic discs were again as clear as before.

The incident emphasizes the necessity, whenever there is a chance of such an extravasation after operation, of following the patient's vascular and respiratory condition with the closest scrutiny.

*Third Operation.*—Nov. 27, 1906. Under general narcosis the second stage of the exploration was undertaken. Chloroform was employed but the drug was taken just as badly as ether had been on the previous occasion. The tourniquet was again applied, the bone flap reelevated, and the clotted residue of the extravasated blood was scraped away from the bone and dura. The upper edge of the cranial opening was extended by rongeurs across the median line (Fig. 1) in order to expose completely the dura covering the mesial edge of the

4. Blood-Pressure Changes in Cheyne-Stokes Respiration, Johns Hopkins Hosp. Bull., 1906, xvii, 126; also Clinical and Experimental Observations on Cheyne-Stokes Respiration, Jour. of Exper. Med., Oct. 12, 1906, viii, 565.

hemisphere. When this was done much difficulty was again experienced in checking the dural bleeding, which started up afresh from the parasinoidal expansions in the region of the Pacchionian granulations. The chief of these bleeding points were fully 2 cm. from the median line, showing the considerable breadth of the sinus, together with its lateral expansions at this point. As is usual, the extravasating fluid was not pure venous blood, but was mixed with cerebrospinal fluid. Fully three-quarters of an hour were expended in an effort to get the persistent oozing under full control before it was thought safe to open the dura.

The membrane was opened by reflecting a flap of moderate size, whose pedicle, contrary to the usual custom, was placed toward the median line. (Fig. 2) This was done so as to insure, by retraction on the reflected membrane, the best possible view under it, and, further, so as to avoid injury to the superior cerebral vessels where they leave the subarachnoid spaces and cross over the subdural space into the longitudinal sinus.

With the clean, dry cortical exposure which was finally secured the topographic features of the field were easily recognized. As shown in the sketch (Fig. 2), two large vessels (the superior cerebral anastomotic veins) ascended toward the median line across the anterior half of the exposed field. The

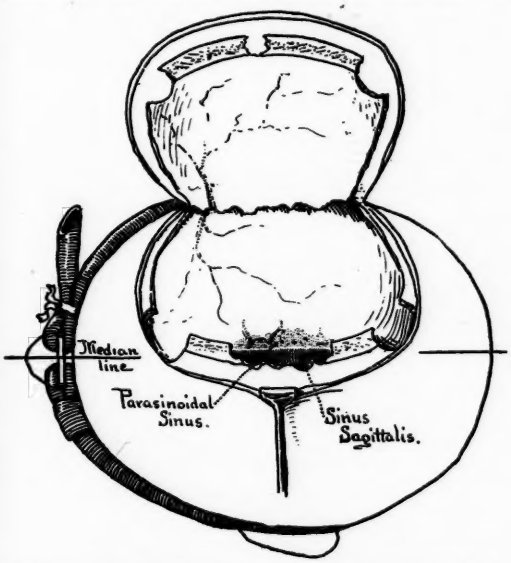



Fig. 1.—Diagrammatic view of vertex, showing situation of osteoplastic flap in relation to sagittal and parasinoidal sinuses. Additional bone removed with rongeurs from superior (bevelled) edge of cranial opening in order to expose median line.

posterior of these vessels lay, for the most part, over the sulcus centralis (Rolandi), parting from it at the superior genu to pass forward and anastomose with the more anterior of the vessels. This left exposed a small triangular space, bounded anteriorly by this large vein, posteriorly by the upper limit of the central fissure, and on the mesial surface by the edge of the hemisphere. The surface of the brain was normal in appearance; it pulsated and was no more tense than the degree of cyanosis could easily have accounted for.

The exposed cortex was faradized, and in this patient for the first time I succeeded in eliciting clean-cut movements in the toes, lower leg and thigh. The centers for the lower extremity, which were entirely confined to the triangular area just described, are indicated in Figure 2. It is unusual to have this inaccessible edge of the hemisphere so freely exposed as to allow of cortical stimulation.

Opposite to the superior genu, movements were elicited in the thoracic muscles (seemingly of the lower part of the pectoralis major) and also in the lateral abdominal muscles. Below the genu, movements of the shoulder, (shown by elevation and abduction and also adduction of the arm) were obtained; and from centers still further down occurred movements in the elbow (flexion) and similarly in the wrist. Posterior to the central fissure, as is invariable, no motor responses whatever could be elicited with the same strength of current as that which easily brought out movements from the precentral gyrus. These stimulation observations were made, partly to certify the topographic landmarks, partly in the hope that some abnormality of motor response might throw light on the seat of the lesion. They served merely to assure us of the physiologic competency of the pyramidal tract.

It was our hope that the expected tumor would prove to be a cortical one; but we had planned, in the absence of a surface lesion, to incise the precentral convolution in the anticipation of finding a growth underlying this portion of the cortex. I was deterred from making such an exploratory incision by the fact that the external appearances were absolutely normal; by the absence of bulging sufficient to indicate any considerable increase in cerebral pressure; by the fact that there was no palpable difference in tension between the suspected region when compared with the cortex elsewhere; and lastly by the presence of the large venous radicle which crossed the precentral convolution at the very situation where we had expected to incise it and the ligation of which might have led to serious consequences.

Considering the case a surgically hopeless one, the dura was

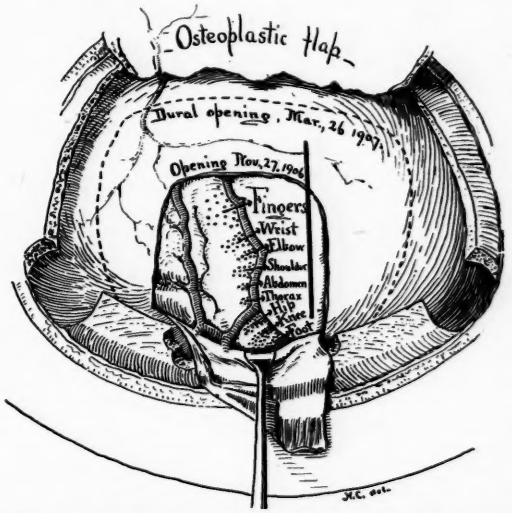



Fig. 2.—For orientation compare with Figure 1. Note comparatively small dural opening at this operation (Nov. 27, 1906). Posterior anastomotic vein lies, except at its upper end, in central fissure. Dots represent points from which motor responses were obtained. Centers for lower extremity lie above genu, which practically corresponds with point where vein leaves central fissure to pass forward. Heavy line shows situation of incision in gyrus centralis posterior made at subsequent operation, March, 26, 1907. Compare with Figure 3. (Two-thirds actual size.)

accurately closed, the bone flap was replaced, and the scalp was once more resutured, with an anterior and posterior drain leading to the two external trephine openings.

Though considerable blood was lost during the operation, it was well borne, even with the patient in a semi-erect posture. The wound healed without reaction despite its double reopening.

*Postoperative Seizures.*—On December 17, three weeks after this operation, the patient had his first postoperative seizure. It began, as of old, with a sensation of numbness and tingling in the left foot and leg, the sensory disturbance spreading to his thigh, abdomen and chest and reaching as high as the pectoral level. There was some jerking and twitching of the abdominal muscles also, but none in the arm or leg. There was no loss of consciousness. On December 23, another seizure of the same type occurred, and from this time on they increased in fre-

quency and severity. During January he had a serious attack of bronchial pneumonia, which had many features suggestive of pulmonary tuberculosis; but though the sputum was repeatedly examined no tubercle bacilli were found. It was thought during this period that his intracranial symptoms might possibly have been due to a cerebral tubercle—a form of growth which could easily have explained the peculiar subsidence of the intracranial symptoms following their onset in 1896.

During this illness, early in the year, he had a number—occasionally more than one a day—of particularly severe epileptiform attacks involving the entire body and always with loss of consciousness. They were, however, invariably preceded by the same sensory aura which characterized his milder seizures. In addition to these severe fits there were a number of mild ones, in which consciousness was retained. These minor attacks were usually accompanied by profuse sweating of the left leg and foot, chiefly below the knee—so profuse in fact, as to soak the bedclothes. The sensory aura which preceded them altered its position from time to time, occasionally starting as a "nervous sensation" in the abdomen, at other times in the shoulder, or again shifting back to its former situation in the leg.

In February there appeared a progressing weakness of the left side of the body; and after one particularly severe seizure, February 7, he became almost completely hemiplegic, so that he was no longer able to sit up. From this time on, until his later operations, he was confined to his bed.

The notes in regard to his physical state at this period are included in Dr. Thomas' report. His mental condition seemed normal. He would lie quiet for hours at a time with uncomplaining patience, which might have been mistaken for lethargy had he not responded intelligently and promptly when addressed. His seeming apathy, however, may possibly have been a symptom of his intracranial lesion. He complained of no particular physical discomforts; indeed, after recovering from his bronchopneumonia he gained markedly in weight (30 pounds) and strength in spite of the frequent epileptic seizures and his hemiparesis. His constant request was that something further be attempted to put a stop to his attacks. Although the outlook from a surgical point of view promised so little, the fits were becoming so severe and so frequent that it seemed unfair to deny the poor fellow the more extensive exploration which he so earnestly solicited.

*Fourth Operation.*—March 21, 1907. After shaving and cleaning the head on the operating table as is our custom, chloroform was administered and the original bone flap was turned down in the scar of the previous operations. The patient again took the anesthetic in the worst possible fashion. There was extreme cyanosis and, as at the first operation, a great deal of bleeding was encountered near the median line. On exposing the dura the earlier incision of the membrane was found to have healed perfectly, there being no trace of the wound other than that made by the black points of the iron-dyed, fine, silk sutures that had been used in closing it. The dura was everywhere smooth and showed no sign of being more adherent to the skull than usual—this in spite of the extradural extravasation which had occurred before the last closure.

Owing either to the patient's cyanosis or to some alteration in intracranial conditions, the dura was found at this sitting to be under considerable tension. In view of this and also in consequence of the considerable fall in blood-pressure which had taken place, it was deemed wise, as before, to postpone further measures for a second sitting. Bleeding, as at the first operation, was so free, from the region of the Pacchionian granulations as well as from the edges of the freshly incised skull (for the old cranial incisions had become largely filled in with vascular new-bone), that a layer of gauze was placed over the dura and on this the osteoplastic flap was closed in the hope of lessening the chance formation of another extradural clot. The scalp was then sutured with a continuous Pagenstecher suture, a protective drain being left between the edges to carry into the dressings such blood as might extravasate.

The wound was dressed on the second day and the sutures all removed; there was no particular uplift to the bone flap and consequently it was presumed that there had been no extradural extravasation. Apprehensive of the effects of a second anesthetization, not only from the knowledge of the difficulties of its administration, but also because of the pneumonia which had followed the previous second-stage operation, it was determined to attempt an exposure of the brain at this time without narcosis.

*Fifth Operation.*—March 26, 1907. He had been given, as on all previous occasions, ⅛ of a grain of morphin and 1/100 of atropin hypodermically. When the bone flap, for this fifth time, was again reflected, contrary to our expectations a shallow extradural clot, possibly 1½ cm. in thickness, was disclosed, lying between the bone and the gauze layer. Gauze and clot were removed together from the dura. In the absence of the ether cyanosis there was but slight bleeding, and this occurred from one or two points only on the convex side of the freshly opened scalp wound. The tourniquet was not used on this occasion.

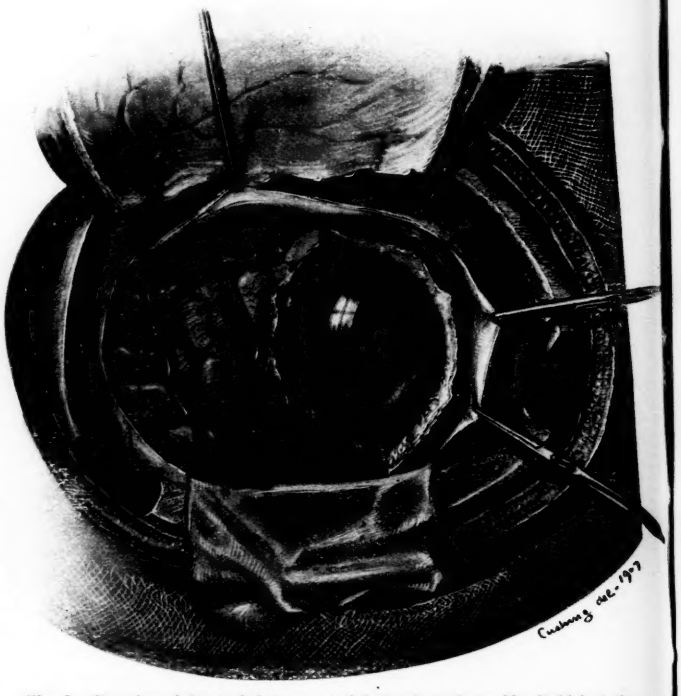


Fig. 3.—Drawing elaborated from a careful sketch made by Mr. Brödel at the time of operation; showing external cyst partially enucleated and before its rupture. Compare with Figure 2. (Three-fourths actual size.)

The dura was incised some distance outside of the omega-shaped incision previously made (Fig. 2), but in line concentric with it; that is, over a part of the cortex where we were certain not to find adhesions. On reflecting this dural flap it was found, to our gratification, that no cortico-dural adhesions had formed in consequence of the old operation except at one point where under the old incision there were two or three fine strands which were easily broken down with the blunt end of the scalpel. Except for the row of delicate, black sutures completely covered by endothelium, the under surface of the dura was absolutely smooth and of normal appearance.

The brain protruded slightly through the opening. The landmarks, previously certified by faradization, were again easily identified. As the dural opening laid bare a considerably larger area of cortex than at the earlier exposure, a better idea was given of the character of the convolutions. The precentral gyri were of a normal, pinkish color; those posterior to the central fissure, on the other hand, were distinctly yellowish. Palpation of the cortex revealed no apparent difference in tension between these areas; but as a result of this manipulation the patient had a slight epileptic attack, beginning in the left side and shoulder. This was of short duration and was unattended by loss of consciousness—indeed, the patient called our attention to it himself.

The gyrus centralis posterior was evidently flattened and of considerably more than its natural width; and it was determined to explore through the crest of this convolution. Consequently three or four pairs of fine, split, black-silk sutures were inserted so as to enclose the chief vessels which crossed the convolution. An incision was made between these sutures. There was no bleeding. About 1 cm. (3/8 in.) below the surface of the convolution the top of a thin-walled cyst came into view. By slow dissection and by enlarging the incision until finally it measured about 5 cm. (2 in.) in length, the cyst was almost completely enucleated by carefully scraping away the surrounding cerebral tissue from its smooth walls.

The patient during this entire procedure was perfectly conscious and experienced no sensory impressions whatsoever, even when the dura was incised. The extensive manipulations of the brain were absolutely without disturbing effect and gave

Fig. 4.—Photograph of opened cyst after hardening. (Actual size.)

him no subjective sensations of any sort. In order to test the sensitivity of the dura when put on tension, the edge of the incision was caught in a clamp and the membrane dragged upon; considerable momentary discomfort was caused by the resultant dislocation. At this stage a sketch (from which Figure 3 has been elaborated) of the partially dislocated cyst was made by Mr Brödel.

Further dissection easily liberated the cyst, the base of which was possibly rendered somewhat more accessible by the evacuation of its contents. Its removal, however, disclosed the upper surface of a still larger cyst situated just beneath it. This in turn was shelled out of its bed by pushing the brain away from it, and was removed unruptured (Fig. 4). Large pledgets of absorbent cotton were frequently used to keep the cavity free of blood and to control the bleeding points. As a matter of fact, very little bleeding occurred; at one place only was there a spurting vessel, and bleeding from this was controlled by a fine ligature including the adjoining cerebral tissue.

The dura was then replaced and accurately approximated in its two layers by sutures, the cavity having been filled with Ringer's solution. The gaping hole, however, had by this time largely collapsed or become filled in by the edematous surrounding brain. The bone flap was then replaced and the scalp incision closed, a small "cigarette" drain having been introduced at one point. The placing of the interrupted fine silk sutures in the scalp on intestinal needles occasioned considerable discomfort, but this, with the possible exception of the chance sponging of the edges of the incision, was the only part of the operation which caused any sensation whatever.

The entire procedure lasted about three hours, the patient being interested, asking frequent questions and being engaged in conversation most of the time. At the end of the procedure he professed that he experienced a sensation of improvement in the arm and he certainly appeared to move it more freely than at any time since his attack of hemiplegia.

## COMMENT ON THE SURGICAL REPORT.

From a purely operative aspect there are several features of this patient's history which may deserve especial comment. Among them are: 1, The field of the exploration necessitated by the high situation of the lesion; 2, the occurrence of a postoperative extradural hemorrhage; 3, the absence of cortical adhesions on a second opening of the dura; 4, the association of the subcortical tumor with Jacksonian epilepsy; 5, the possible cystic degeneration of a glioma; 6, the removal of a subcortical tumor from the brain of a conscious patient at a second-stage operation.

1. *The Situation of the Exploration.*—There is no portion of the hemisphere's surface which is more difficult to freely expose than its mesial edge near the upper end of the sulcus centralis (Rolandi). The lateral expansions of the longitudinal sinus may extend out between the two layers of the dura in some cases for a distance of 2 cm. or more from the median line. Into these expansions or parasinoidal sinuses project the Pacchionian granulations, and in adult life, as is well known, these bodies, from pressure atrophy, may cause deep depressions in the skull alongside of the sagittal suture. Furthermore, emissary vessels in considerable number and of varying size pass from the longitudinal and its parasinoidal sinuses into the diploë of the overlying bone and serve to attach the membrane and skull with especial firmness at these points. Hence the separation of the dura from the skull while making an osteoplastic flap in this situation is apt to be a bloody procedure, and the bleeding is apt to continue from the injured emissary vessels, particularly if there is any passive congestion or cyanosis of the head from respiratory difficulty, even though the patient be put in a fairly erect posture.

For these anatomic reasons it is, I think, particularly unsafe to attempt to make a bone flap in this situation by any of the so-called rapid methods—by electric saws or rotary drills—for these vessels are much more likely to be injured by the subcranial guard of these instruments than when the dura is separated, before the bone incision, by careful dissection through a large primary trephine opening. On two occasions (once with a Doyen saw and once with a Cryer drill) I have seen not only bone but dura incised at the same time, and should this accidental incision of the dura include the edge of the parasinoidal expansion—or worse still, the upper end of one of the cerebral veins where they enter these lateral lacunæ—a most serious complication would result.

It is preferable, I believe, whatever method be chosen for making the flap, to allow a space of 2 or 3 cm. between the midsagittal line and the upper margin of the flap. Then the mid-portion of the upper edge of the opening can be rongeured away—even across the median line—after carefully separating dura from bone and by checking the bleeding by the temporary placement of pledgets of absorbent cotton against the bleeding points.

Not only between bone and dura, but between dura

and brain, are difficulties to be met with in exposing this particular field. The superior cerebral veins, especially the large anastomotic vessels which connect the Sylvian veins with the longitudinal sinus, pass upward, as they did in this case, often in the central or paracentral sulci. As they near the upper edge of the hemisphere they leave their protected position and emerging from the subarachnoid spaces bridge across the open subdural space to enter the parasinoidal expansion of the sinus. They consequently may be attached to the dura at a distance of a centimeter or two from the median line, and careless elevation of the membrane at this position may tear these vessels and lead to a free extravasation of blood which is difficult to control.

It is noteworthy that in infants, as well as in most of the lower animals, Pacchionian granulations are not to be found—and this I believe is true also for adult anthropoid apes. With the exception of the human adult, therefore, the anatomic conditions are such that the cerebral veins may be doubly ligated as they bridge across from cortex to sinus, so that the exposure of the mesial edge of the hemisphere is not difficult. It is a different matter in the case of adult man.

2. *Postoperative Extradural Extravasations.*—This is a complication which must occur from time to time to every surgeon who operates frequently by the Wagner bone-flap method for intracranial conditions. In my experience it has happened four or five times in approximately three hundred craniotomies for various conditions. One of the cases (a successful tumor extirpation) resulted in a fatality, since the pressure from the clot was relieved too late for medullary recovery to take place. The lesson was sufficient to teach the absolute necessity of the most careful postoperative observation, with a blood-pressure apparatus, of all patients after an osteoplastic operation. The phenomena are so characteristic that they should never escape detection, and a slowed pulse or a rise in blood pressure should lead to the immediate removal of the dressing and examination of the flap to see whether it has become lifted by the intracranial pressure, without waiting for unconsciousness or respiratory changes such as occurred in this case.

It is an accident which may occur even after a presumably dry closure, for the congestion which may accompany postoperative vomiting may raise the venous pressure so as to start up venous oozing from the vessels which were previously dry. Furthermore, inasmuch as the dura has already been separated from the bone during the operation, and as there is a tendency with each inspiration for the freed membrane to be drawn away from the skull and thus for oozing to be encouraged, it is easily understood how venous bleeding under these circumstances can readily lead to an extravasation larger than that which follows the traumatic rupture of the meningeal artery. In the latter case the adherent membrane must be slowly dissected away from the skull by the extravasating blood, even though under arterial tension.

It is perhaps a safe rule always to drain in these cases, and this is best accomplished by puncturing the scalp a centimeter or two outside of the upper angle of the incision and by inserting protective wicks which lead to the trephine openings. These wicks may be painlessly withdrawn after forty-eight hours. It is a great temptation, however, to close without them, and experience usually tells when it is possible to do so. Possibly 50 per cent. of osteoplastic resections can be safely closed without drainage.

3. *The Absence of Adhesions.*—It is unusual to have so conclusive a demonstration of the fact that after operative exposure of the brain there need be no subsequent formation of corticodural adhesions. On a few occasions I have had postmortem evidence pointing in this direction. These were cases in which a craniotomy with cortical stimulation had been performed and in which death had occurred some months later owing to a continuance of the primary trouble or had supervened in consequence of some intercurrent malady.

The total absence of adhesions in these cases, even along the line of dural incision, I attribute to the extreme care with which the margins of the dural wound had been approximated at the close of the operation, It is true of dura as of peritoneum that, provided the edges of the membrane are carefully united, endothelial cells will shoot across the line of incision with great rapidity; in other words, adhesions will not form unless a raw surface has been left either on the side of dura or of pia-arachnoid, or unless there has been a mild grade of infection. It is important to bear this in mind in operations conducted primarily for the purpose of freeing adhesions which have pre-existed. It is generally believed that these procedures are futile owing to the almost certain reformation of adhesions, but this I take to be no more true of the endothelial-lined spaces of the meninges than of the corresponding spaces in other serous cavities.

4. *Focal Epilepsy with Subcortical Tumors.*—The position has been taken by Allen Starr that in all cases of focal epilepsy of obscure origin the intracranial conditions should be investigated, inasmuch as Jacksonian fits are often induced by a tumor even before any general pressure symptoms are present. When such a lesion leads to irritative symptoms of this type it is usually accessible, being near the cortex and in the neighborhood of the Sulcus centralis (Rolandi).

We anticipated at the first exploration (Nov. 27, 1906), that a cortical lesion at the upper end of the precentral gyrus would be disclosed. One can not say even now that "motor-cortex" at the depth of the central fissure was not directly involved, and I know that Dr. Thomas would have been glad, had I not thought it inadvisable, to have determined this by cortical incision at the time. It was not, however, until the second exposure (March 26, 1907), which gave a wider view of the hemisphere, that the peculiar discoloration and broadening of the postcentral gyrus was evident—an appearance which led to the subcortical exploration being made behind the central fissure.

The upper surface of the cyst was found about 1 cm. below the crest of the broadened gyrus, approximately on a level with the motor centers for the arm. Although the patient's invariable sensory aura is explained by this finding, it furnishes no explanation for its variable situation. It is noteworthy that while the brain was being palpated in an effort to determine whether a growth could be thus detected, the gentle manipulation led to a slight focal attack, the twitching being limited to the contralateral shoulder and side. The patient himself called attention to it, otherwise it would have escaped notice. The subsequent cortical incision and extensive dissection led to no irritative symptoms either of a motor or sensory nature.

5. *Cystic Degeneration of a Brain Tumor.*—At the time of the operation, inasmuch as there were two separate though adjoining large cysts and a number (three or four) smaller ones which lay in the crevice between

them, it was presumed that they were of parasitic origin in spite of the rarity of ecchinococcus cysts in this part of the world. No hooklets, however, were to be found in the fluid at the time, and Dr. W. G. McCallum's subsequent report showed that the structure of the cyst wall was quite other than that characterizing old echinococcal cysts. One of the larger cysts was used for a thorough microscopic examination; the other was hardened after opening and is shown in Figure 4.

Aside from those of parasitic origin, encephalic cysts occur as the residual stage of an absorbed clot, and it is presumable that porencephalia originates in this way —namely, as the result of an extensive hemorrhage in the infant brain. After similar hemorrhages in adult life cicatrization without cyst formation is more usual.

The variety of cyst which chiefly concerns us is that found in association with a glioma, and it is difficult at times to determine just what is its pathologic relationship to the primary tumor. Hemorrhages, as we know, frequently occur in the center of these vascular growths, and the cysts may possibly represent the site of such an extravasation. It apparently is exceptional, however, for such cavities to be disclosed in the process of this formation from a clot. It is more probable that the greater number of these cysts represent degenerative processes, for it is well known that there is a tendency for all gliomatous tissues to undergo fatty changes, with resultant breaking down and liquidation, so that sharply-defined, thin-walled cysts may result. In this particular case Dr. Welch, after examining the sections, expressed the opinion that the cyst represented a completely degenerated glioma. We have been unable to find any traces of the original tumor in its walls. It is unusual for the process thus to involve the entire growth, for one commonly finds one patch at least of the wall which remains thickened and shows viable tumor cells on microscopic examination.[5]

I have had an opportunity of seeing such a cyst presumably in the process of its formation. A suboccipital exploration in a young boy revealed a large glioma involving the middle portion as well as the right lobe of the cerebellum, removal of which was deemed impossible. Palliative decompression was resorted to. Six months later, after a period of marked improvement, the child suddenly and unexpectedly expired, presumably from medullary involvement. An autopsy a few hours after death revealed a large sac the size of an orange occupying the larger part of the cerebellum, which protruded under the cervical muscles through the generous suboccipital opening. The sac contained a semifluid, brown, grumous material. No macroscopic or microscopic evidence of the original growth could be found in the cavity of the cyst wall.

Sir Victor Horsley has referred to one or two remarkable cases in his own experience in which there seems to have been a similar sequence of events, and it is possible that in a number of our patients in whom symptoms of tumor have completely subsided for a number of years after palliative or decompressive operations a like metamorphosis may have occurred. In the patient whose history we have given here it may be recalled that for some years all pressure symptoms had subsided, leaving only the focal signs of irritation due to the position of the lesion near the "sensori-motor" cortex.

If these degenerative processes may be expected to occur, even though rarely, it adds one more argument in favor of the early performance of a decompressive craniectomy in every case of brain tumor. It strengthens, furthermore, the seemingly paradoxical statement which I have frequently made, that "the cases of brain tumor which are most favorable for operations are those in which the tumor can not be localized." In other words, when a tumor occupies a silent area—provided it does not lead to hydrops ventriculorum—all the symptoms may be relieved by decompression and the growth may remain quiescent for months or years—possibly it may even regress. When, on the other hand, a tumor is localizable, this often means that it has caused sufficient damage to leave the patient more or less physically or mentally crippled even though the growth be accessible and of such a nature that it can be removed. I do not desire, however, to have these statements interpreted too literally.

6. *The Second-Stage Operation Without Anesthesia.* —Although this undertaking, as Dr. Thomas has said, was premeditated, in consequence of our previous unfortunate experience in administering general narcosis to this patient we must confess to surprise at its successful accomplishment. Contrary to all expectations, the dura proved to be insensitive to such manipulations as were necessary to freely open it. Only when it was put under tension or displacement was any discomfort occasioned; otherwise it seemed to be absolutely free from sensitivity. The conditions were similar in many respects to those which are present in the visceral peritoneum, which, according to Lennander's as well as our own observations, seems to possess no sensory nerves, pain being occasioned only when the viscera are so dislocated as to put the parietal serosa under abnormal tension.

Before this experience, knowing that the dura receives its innervation from the trigeminal nerve, we had been inclined to the belief that it was a highly sensitized membrane, and in experimental observations on the lower animals the struggling and rise in blood pressure which commonly occur when the dura is reached in the act of trephining are usually attributed to the presence in the membrane of nerves of pain.

If the results of this single clinical observation can be relied on it is presumable that the reactions observed in the experimental work are due rather to dislocation of the membrane and its forcible separation from the skull—to dragging, in other words—rather than to the effect of direct injury such as an incision would occasion.

Further investigations in this direction are necessary, and it is possible that we may have to modify, in some respects, our ideas of what it is that causes intracranial pain, just as we have had to modify our ideas of what causes visceral pain in the abdominal cavity. I had always supposed that headaches were dural in origin, for the hemispheres themselves have long been known to be insensitive, but it was a new idea to attribute intracranial discomforts to dislocation of the membrane rather than to pressure on it. Thus the headaches in cases of brain tumor may be due, likely enough, to dislocation of the falx or tentorium by the growth rather than to pressure against the mural portion of the membrane.

5. A subcortical cyst showing this characteristic I have recently removed from a hemiplegic patient whose paralyses have cleared up even more rapidly than they did in the patient, the subject of this report. The cyst, measuring 7 by 5 by 4 cm. (2¾ by 2 by 1½ in.) in its several diameters, was removed intact. A patch about 2.5 cm. (1 in.) in diameter and 0.5 cm. (¼ in.) in thickness, on the side of the otherwise thin-walled cyst nearest the cortex, showed glioma cells. The fluid contents of the cyst were watery, clear and of a yellowish tinge.

To open the dura and remove a cerebral growth without an anesthetic was an experience which, so far as we knew, was unique, and the principle may possibly prove to be applicable to other cases.[6]

I have always dreaded a second-stage operation in cases of brain tumor, although this method of procedure is advocated, as is well known, by the highest authorities. I believe that one reason why the complete operation at a single sitting has been found inadvisable, in the hands of many, is the undue loss of blood which occurs during the process of forming an osteoplastic flap, or of otherwise entering the skull when rapid methods are followed and no tourniquet used. Painstaking hemostasis—one of the guiding principles of all surgical work in Dr. Halsted's clinic—should be observed in cranial as strictly as in other operations, and the fact that postoperative shock is a complication which is almost never seen is doubtless attributable to this custom. Possibly owing to this I have not been impressed by the arguments in favor of a two-stage operation, and it has been my custom to open the dura and if possible to remove the tumor at the first sitting—only twice in my ten cases of successful extirpation has a second-stage procedure been employed. Thus not only are the risks of a second anesthetization avoided, but also the period of anxiety for patient, friends and physician which is inevitable when the procedure is carried out in two sittings.

If it should prove to be possible, however, to carry out the second stage of an intracranial exploration without an anesthetic this would be a stronger argument for the two-stage procedure than the mere avoidance of shock. One paramount advantage, of course, would lie in the absence of such complications from cyanosis as have been described in the case here reported.

It was truly remarkable in this patient to find that the extensive manipulations which were essential to the removal of the tumor could be carried out while the patient was perfectly conscious, was chatting and was taking a lively interest in the progress of the operation. The complete freedom from venous stasis was all the more apparent, inasmuch as so much difficulty had been experienced during the four preceding sessions.

Since this original experience another opportunity has offered itself of conducting the second-stage of an extirpation operation in similar fashion without an anesthetic, and although in this second patient, owing to the extraordinary size and deep situation of the tumor, a complete enucleation proved to be impossible, the opening of the dura and partial extirpation of the growth showed the feasibility of procedure of this kind without anesthesia even in the case of a young child.

One thing I greatly regret not having done in the final operation (March 26, 1907) on the first patient, namely, to stimulate the exposed cortex while the patient—a particularly intelligent and interested subject—was conscious. The enucleation was carried out slowly and carefully, sufficient time being taken to allow Mr. Brödel to make a sketch showing the partly exposed cyst, and it would have taken but a few moments to have gone over the postcentral parts of the field with the electrode, especially since our orientation was assured owing to the detailed faradization of the motor strip on Nov. 27, 1906. It is quite possible that stimulation, particularly of the postcentral convolutions in a conscious patient, may throw light on the somewhat obscure localization of sensory function. This, however, can only be a conjecture, for it is notable that although the incision was made down to the tumor along the crest of the widened postcentral convolution—in other words, in the middle of the supposed sensory field—the patient experienced no subjective sensations whatever. It may, of course, be a different matter when this field is faradized.[7]

[EDITOR'S NOTE.—THIS ARTICLE WAS READ AND DISCUSSED IN A SYMPOSIUM. THE DISCUSSION WILL APPEAR LATER.]

6. In his Toronto address (The Technic of Operations on the Central Nervous System: Brit. Med. Jour., Aug. 25, 1906, 484) Sir Victor Horsley emphasized the fact that profound narcosis is unnecessary except at the early and late stages of an intracranial operation; and the same thing is true for most intra-abdominal procedures, little anesthesia being needed while the viscera are being handled.

7. Once, more recently, I have had the opportunity of making a single observation in this direction. In a simple case of subtemporal decompression for an unlocalizable tumor an emissary vessel from the meningeal was injured while rongeuring away the bone, and as it was beyond the reach of a ligature the wound was temporarily packed. The dura, consequently, was not opened until 48 hours later, at which time no anesthesia was needed for the completion of the operation. After making the dural defect the exposed right temporal lobe was faradized. When the electrode was applied to certain areas of the superior temporal gyrus the patient said that he heard a ringing sound which was distinguishable from the "buzz" of the interruptor. The observation is suggestive, though it would not be safe to draw too definite conclusions from it; for the conditions were abnormal owing to tension, and his mental processes were a little dull.

---

# AMERICAN MINERAL WATERS;

## IN THE LIGHT OF RECENT ANALYSES.

JAMES K. CROOK, A.M., M.D.
Author of "The Mineral Waters of the United States."
NEW YORK.

Bulletin 91 of the Bureau of Chemistry, United States Department of Agriculture, relates to a recent chemical investigation of American commercial mineral waters. The waters examined by the government chemists are all found in the markets of the country and are recommended to the public in virtue of certain valuable mineral ingredients they are stated to contain, or on the score of their purity and freedom from harmful substances. Included in the analyses are many of the best known springs of the United States, some of which have long held a high place in the estimation of physicians. It is proper, therefore, that the results be given wide publicity and the essential facts reviewed.

Ranged in contrast with their own tables the bureau chemists present the analyses of the waters as hitherto advertised by the owners or managers of the springs, and upon which the medical men of the country have relied in judging as to their nature and value. Of the forty-two analyses, covering the waters of as many different springs, we find that twenty-one, or exactly one-half, agree essentially with those hitherto in use; ten show very considerable variations, but admit of fairly satisfactory adjustment. In four instances the owner's analyses were not obtainable, while in the case of seven springs the differences are totally irreconcilable, in several instances entirely eliminating the spring from the class to which it had been assigned by the confiding collator of mineral water facts and figures. For purposes of critical comparison I converted the analyses of twenty of the most prominent and best-known waters in the Bureau of Chemistry list from parts per million to grains per United States gallon, to conform to the method of expression most common in this country. These analyses are ranged in parallel columns with those hitherto in vogue. For convenience, the Bureau of Chemistry tables are set down under the head of "New Analysis," the advertised analyses are referred to as the "Old Analysis."

CHAMPION WATER, SARATOGA SPRINGS, NEW YORK.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. C. F. Chandler, 1871. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 0.54 | Calcium fluorid | trace |
| Potassium chlorid | 5.90 | Potassium chlorid | 40.45 |
| Sodium chlorid | 262.65 | Sodium chlorid | 702.24 |
| Sodium sulphate | 1.71 | Potassium sulphate | 0.25 |
| Potassium bromid | 1.16 | Sodium bromid | 3.58 |
| Potassium iodid | 0.01 | Sodium iodid | 0.23 |
| Sodium metaborate | small amt. | Sodium biborate | trace |
| Sodium nitrate | trace | Sodium phosphate | 0.01 |
| Lithium chlorid | 0.31 | Lithium bicarbonate | 6.25 |
| Sodium bicarbonate | 10.31 | Sodium bicarbonate | 17.62 |
| Magnesium bicarbonate | 28.32 | Magnesium bicarbonate | 193.91 |
| Calcium bicarbonate | 81.81 | Calcium bicarbonate | 227.07 |
| Barium bicarbonate | 0.69 | Barium bicarbonate | 2.08 |
| Strontium bicarbonate | trace | Strontium bicarbonate | 0.08 |
| Ferric oxid and alumina | 0.07 | Iron bicarbonate | 0.65 |
| Mangano-manganic oxid | trace | Alumina | 0.46 |
| Silica | 0.71 | Silica | 0.70 |
| | | Organic matter | trace |
| Total | 392.84 | Total | 1195.58 |

The remarkable discrepancy in these analyses, especially in quantitative determinations, would appear to indicate either that the Champion Spring had materially declined in strength in the last 36 years, or that it was suffering from a heavy ingress of fresh water at the time the government samples were collected.

VICHY WATER, SARATOGA SPRINGS, NEW YORK.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. C. F. Chandler, 1871. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 0.05 | Calcium fluorid | trace |
| Potassium chlorid | 0.43 | Potassium chlorid | 14.11 |
| Sodium chlorid | 86.94 | Sodium chlorid | 128.69 |
| Potassium bromid | trace | Sodium bromid | 0.99 |
| Potassium iodid | trace | Sodium iodid | trace |
| Sodium sulphate | 1.73 | Potassium sulphate | trace |
| Sodium metaborate | trace | Sodium biborate | trace |
| Sodium bicarbonate | 48.56 | Sodium bicarbonate | 82.67 |
| Magnesium bicarbonate | 3.52 | Magnesium bicarbonate | 41.50 |
| Calcium bicarbonate | 8.71 | Calcium bicarbonate | 95.52 |
| Ferric oxid and alumina | 0.18 | Iron bicarbonate | 0.95 |
| | | Barium bicarbonate | 0.59 |
| Calcium silicate | 1.60 | Strontium bicarbonate | trace |
| | | Organic matter | trace |
| Silica | 0.11 | Silica | 0.76 |
| Lithium chlorid | 0.03 | Lithium bicarbonate | 1.76 |
| | | Alumina | 0.48 |
| Total | 151.96 | Total | 367.32 |

It will be observed that the Bureau analysis shows about 60 per cent. less solid contents than is given by Professor Chandler. The proprietor of the spring writes me that the Saratoga waters fluctuate in volume and strength during the year. It is possible that the government analysis was made from samples taken during or just after a wet season when the water was more or less diluted. The Saratoga Vichy Springs Company sends the writer an analysis bearing date of April 17, 1907, by Professor Ellery, of Schenectady, in which the total solid contents of the spring are placed at 173.90 grains per United States gallon. It would appear probable that the water has suffered more or less decline in potency since the date of the old analysis.

CONGRESS WATER, SARATOGA SPRINGS, NEW YORK.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. C. F. Chandler, 1871. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 1.77 | Calcium fluorid | trace |
| Potassium chlorid | 19.78 | Potassium chlorid | 8.05 |
| Sodium chlorid | 248.65 | Sodium chlorid | 400.44 |
| Potassium iodid | 0.05 | Sodium iodid | 0.14 |
| Potassium bromid | 2.32 | Sodium bromid | 8.56 |
| Sodium sulphate | 0.74 | Potassium sulphate | 0.89 |
| Lithium chlorid | 1.89 | Lithium bicarbonate | 4.76 |
| Sodium bicarbonate | 36.41 | Sodium bicarbonate | 10.77 |
| Magnesium bicarbonate | 97.14 | Magnesium bicarbonate | 121.76 |
| Calcium bicarbonate | 131.03 | Calcium bicarbonate | 143.40 |
| Barium bicarbonate | 0.77 | Barium bicarbonate | 0.93 |
| Strontium bicarbonate | trace | Strontium bicarbonate | trace |
| Sodium metaborate | trace | Sodium biborate | trace |
| Sodium nitrite | trace | Sodium phosphate | 0.02 |
| Ferric oxid and alumina | 1.21 | Iron bicarbonate | 0.34 |
| Silica | 1.14 | Silica | 0.84 |
| | | Alumina | trace |
| Total | 542.90 | Total | 700.90 |

Professor Chandler's analysis here shows an excess of 158 grains over that of the Bureau of Chemistry. Of this 151 grains is represented by sodium chlorid. The remainder is more than made up by the excess of magnesium bicarbonate and calcium bicarbonate. It will be observed that the government analysis shows some 25 grains more of sodium bicarbonate than that of Professor Chandler. The differences are not essential, and, according to a letter from the proprietor to the Bureau of Chemistry, may have been caused by fresh water finding its way into the spring at the time the government samples were taken.

HATHORN WATER, SARATOGA SPRINGS, NEW YORK.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. C. F. Chandler, 1871. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 2.19 | Calcium fluorid | trace |
| Lithium chlorid | 2.60 | Lithium chlorid | 11.45 |
| Potassium chlorid | 19.28 | Potassium chlorid | 9.60 |
| Sodium chlorid | 425.93 | Sodium chlorid | 509.97 |
| Potassium bromid | 0.40 | Sodium bromid | 1.53 |
| Potassium iodid | 0.12 | Sodium iodid | 0.19 |
| Sodium sulphate | 0.24 | Sodium phosphate | trace |
| Sodium metaborate | trace | Sodium biborate | trace |
| Sodium nitrite | trace | Organic matter | trace |
| Sodium bicarbonate | 12.81 | Sodium bicarbonate | 4.29 |
| Magnesium bicarbonate | 114.53 | Magnesium bicarbonate | 176.46 |
| Calcium bicarbonate | 179.70 | Calcium bicarbonate | 170.65 |
| Barium bicarbonate | 0.80 | Barium bicarbonate | 1.74 |
| Strontium bicarbonate | trace | Strontium bicarbonate | trace |
| Ferric oxid and alumina | 0.55 | Iron bicarbonate | 1.13 |
| Silica | 0.95 | Silica | 1.26 |
| | | Alumina | 1.13 |
| Total | 760.10 | Total | 888.40 |

The chief discrepancy in these tables is represented by the excess of magnesium bicarbonate, lithium chlorid and sodium chlorid in Professor Chandler's analysis. It may be remarked here that samples of many other Saratoga water taken from their nearest outlets, the springs being walled up at the time, all showed on analysis by the government chemists a much smaller mineral content than those of Professor Chandler's analysis. It is possible that this loss is due, as has been suggested, either to the opening up of many new springs at Saratoga, resulting in the withdrawal of a much larger volume of water than formerly, or to the abstraction from the springs of the powerful solvent $CO_2$ gas, for use as the carbonic acid of commerce.

TATE EPSOM WATER, TATE SPRINGS, TENN.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. T. S. Antisell, Chemist to U. S. Dept of Agriculture, 1872. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | Magnesium chlorid | 0.62 |
| Sodium chlorid | 0.12 | Sodium chlorid | 40.27 |
| Lithium chlorid | 0.03 | Iron chlorid | 2.99 |
| Potassium chlorid | 0.91 | Potassium sulphate | 1.54 |
| Sodium sulphate | 4.38 | Sodium sulphate | 8.50 |
| Magnesium sulphate | 34.71 | Magnesium sulphate | 32.91 |
| Calcium sulphate | 76.53 | Calcium sulphate | 106.66 |
| Sodium nitrate | 0.02 | Nitric acid | 0.02 |
| Calcium bicarbonate | 20.05 | Calcium carbonate | 21.56 |
| Calcium silicate | 0.24 | Calcium phosphate | 1.14 |
| Ferric oxid and alumina | 0.23 | Sodium iodid | trace |
| Silica | 1.13 | Silica | 2.70 |
| Total | 138.35 | Total | 272.91 |

These analyses, both made by chemists of the United States Department of Agriculture, show considerable difference in total solid contents as well as in individual components. Of the 134 grains representing the excess of solids in Professor Antisell's analysis, 86 grains are made up of lime salts, ingredients of comparative unimportance, and 40 grains of sodium chlorid. The chief constituent, magnesium sulphate, which gives the water its name and essential characteristics, is found in the two analyses in nearly equal quantities. There is, of course, a possibility that some of the constituents of the

spring have undergone alteration during the 35 years since Professor Antisell's examination.

MISSISQUOI SPRING, SHELDON, VT.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. S. Dana Hayes, 1867. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | | |
| Lithium chlorid | trace | | |
| Potassium chlorid | 0.20 | | |
| Sodium chlorid | 0.12 | | |
| Sodium sulphate | 1.43 | | |
| Sodium metaborate | trace | Total solid contents shown by Prof. Hayes' analysis, 15.75 grains. Hypothetical combinations not figured out. | |
| Calcium phosphate | trace | | |
| Sodium nitrate | trace | | |
| Sodium bicarbonate | 1.06 | | |
| Magnesium bicarbonate | 4.88 | | |
| Calcium bicarbonate | 9.88 | | |
| Ferric oxid and alumina | 0.12 | | |
| Mangano-manganic oxid | 0.03 | | |
| Calcium silicate | 0.50 | | |
| Silica | 2.23 | | |
| Total | 20.40 | Total | 15.75 |

According to the government chemists' report, "The two analyses do not differ more than would be expected in the case of samples taken on widely separated dates."

BEDFORD MINERAL WATER, BEDFORD, PA.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Victor G. Bloede, Chemist, of Baltimore. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | Ammonium chlorid | 0.02 |
| Lithium chlorid | trace | Lithium chlorid | 0.22 |
| Potassium chlorid | 0.53 | Potassium carbonate | 0.38 |
| Sodium chlorid | 0.53 | Sodium chlorid | 0.72 |
| Magnesium sulphate | 39.79 | Magnesium sulphate | 32.54 |
| Calcium sulphate | 95.34 | Calcium sulphate | 107.80 |
| Sodium sulphate | 1.68 | Sodium carbonate | 2.04 |
| Calcium bicarbonate | 14.81 | Magnesium carbonate | 6.06 |
| Sodium metaborate | trace | | |
| Sodium nitrate | trace | | |
| Sodium nitrite | trace | | |
| Ferric oxid and alumina | 0.17 | Ferric oxid and alumina | 0.16 |
| Calcium silicate | 3.94 | | |
| Silica | 0.08 | Silica | 0.35 |
| Total | 156.87 | Total | 150.29 |

These analyses agree very closely, both qualitatively and quantitatively.

BUFFALO LITHIA WATER, BUFFALO LITHIA SPRINGS, VA.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. Wm. P. Tonry, Maryland Institute, Baltimore. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | Lithium bicarbonate | 2.25 |
| Lithium chlorid | trace | | |
| Sodium chlorid | 0.70 | Sodium chlorid | 4.92 |
| Potassium chlorid | 9.44 | Potassium carbonate | 29.30 |
| Calcium bicarbonate | 6.53 | Calcium bicarbonate | 14.96 |
| Magnesium sulphate | 1.83 | Magnesium sulphate | 0.88 |
| Calcium sulphate | 27.30 | Calcium sulphate | 33.06 |
| Sodium sulphate | 4.60 | Aluminum sulphate | 9.07 |
| Sodium nitrate | 0.17 | Organic matter | trace |
| Ferric oxid and alumina | 0.04 | Iron bicarbonate | 0.30 |
| Calcium silicate | 0.37 | Silica chlorid | 1.87 |
| Silica | 1.83 | Baryta bicarbonate | 1.75 |
| Calcium phosphate..heavy | trace | Phosphoric acid | trace |
| Sodium nitrite | trace | Iodin | trace |
| Total | 43.81 | Total | 98.36 |

It must be confessed that these analyses show a wide variation. Quantitatively, the excess in the older analysis is represented chiefly by the calcium salts, aluminum, lithium and sodium chlorid. The qualitative determinations likewise present a wide divergence. The minute amount of lithium shown in the government analysis would exclude the water from the lithia group. In reply to a letter the writer is informed by the proprietors that the Bureau of Chemistry analysis having been made from samples bought in the open market, it is possible that the examiners were imposed on with adulterated or fraudulent water. Court records show that Buffalo Lithia bottles have frequently been filled with spurious water. The proprietors state that they have relied implicitly on Profesor Tonry's analysis and have had no intention to deceive the profession. An entirely new analysis made at the springs would appear desirable.

GENEVA LITHIA WATER, GENEVA, N. Y.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. A. Auchie Cunningham, F. C. S. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | | |
| Sodium chlorid | 19.16 | Sodium chlorid | 24.54 |
| Potassium chlorid | 0.44 | Potassium chlorid | 13.40 |
| Lithium chlorid | 0.03 | Lithium bicarbonate | 10.03 |
| Potassium iodid | trace | Lithium sulphate | 4.10 |
| Sodium sulphate | 0.16 | Sodium sulphate | 17.64 |
| Magnesium sulphate | 33.36 | Magnesium sulphate | 83.13 |
| Calcium sulphate | 87.01 | Calcium sulphate | 18.75 |
| Calcium bicarbonate | 18.89 | Calcium carbonate | 35.84 |
| Sodium metaborate | trace | Magnesium carbonate | 16.00 |
| Sodium nitrate | trace | | |
| Sodium nitrite | trace | Phosphoric acid | trace |
| Ferric oxid and alumina | 0.05 | Iron carbonate | 2.19 |
| Silica | 0.82 | Aluminum sulphate | 8.75 |
| Calcium phosphate | trace | | |
| Total | 159.82 | Total | 234.33 |

These determinations present wide variations in the most important ingredients, viz., in the sulphates of sodium and magnesium, the carbonate of magnesium, the salts of lithium, and in iron. The Bureau of Chemistry analysis verifies that of Professor Cunningham so far as to show that Geneva is a very useful water of the sulphated-saline-calcic class, but it should no longer be denominated or prescribed as a "lithia" water.

LONDONDERRY LITHIA WATER, LONDONDERRY, N. H.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. H. Halvorson. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Sodium chlorid | 0.03 | Sodium chlorid | 0.83 |
| Lithium chlorid | trace | Lithium bicarbonate | 7.29 |
| Potassium chlorid | 0.26 | Potassium sulphate | 0.30 |
| Sodium sulphate | 0.65 | Calcium sulphate | 25.13 |
| Ammonium chlorid | trace | Aluminum sulphate | 5.05 |
| Sodium nitrate | 0.23 | | |
| Sodium nitrite | trace | Organic matter | 0.00 |
| Sodium bicarbonate | 0.42 | Potassium carbonate | 18.33 |
| Magnesium bicarbonate | 0.41 | Magnesium carbonate | 7.53 |
| Calcium bicarbonate | 2.14 | Calcium bicarbonate | 7.29 |
| Ferric oxid and alumina | 0.02 | Iron carbonate | 1.85 |
| Calcium silicate | 0.07 | | |
| Silica | 0.95 | Silica | 1.25 |
| Total | 5.18 | Total | 74.85 |

These tables are totally irreconcilable. The Bureau of Chemistry analysis shows a smaller mineral content than is found in many ordinary drinking waters. In a recent letter to the writer the present proprietors of the spring state that they have accepted and used in good faith the analyses of Professors H. Halvorson and R. Ogden Doremus made under a former management. Recently, however, they had had reason to suspect the inaccuracy of these analyses and have not used them in their advertising. The water is now recommended and sold simply on its merits as a natural water as it flows from the spring. Londonderry may be recommended as a safe and pleasant beverage, but no physician can correctly prescribe it as a "lithia" water.

POLAND WATER, SOUTH POLAND, ME.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. F. L. Bartlett, State Assayer and Chemist, 1879. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | | |
| Lithium chlorid...minute | trace | Lithium | trace |
| Sodium chlorid | 0.26 | Sodium chlorid | 0.47 |
| Potassium chlorid | 0.26 | | |
| Sodium sulphate | 0.30 | Potassium sulphate | 0.18 |
| Calcium bicarbonate | 2.67 | Calcium carbonate | 1.36 |
| Magnesium bicarbonate | 0.73 | Magnesium carbonate | 0.31 |
| | | Iron carbonate | trace |
| Sodium nitrate | 0.46 | | |
| Sodium nitrite | trace | Organic matter | 0.28 |
| Sodium bicarbonate | 0.25 | Sodium carbonate | 0.09 |
| Calcium phosphate | trace | Calcium fluorid | trace |
| Calcium silicate | 0.42 | | |
| Ferric oxid and alumina | 0.03 | Alumina | trace |
| Silica | 1.16 | Silica | 1.07 |
| Total | 6.54 | Total | 3.76 |

These two analyses show a difference in total solid contents of 2.78 grains per United States gallon, 1.31 of which may be accounted for by the excess of calcium bicarbonate in the new analysis, the remainder by the minute quantities of other ingredients evidently not looked for by the older analyst. These differences are unessential and are so regarded by the government chemists. Poland remains an excellent table water of the light alkaline-calcic class.

MANITOU WATER, MANITOU, COLO.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. Elwyn Waller. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Sodium chlorid | 17.58 | Sodium chlorid | 23.94 |
| Ammonium chlorid | trace | | |
| Potassium chlorid | 7.89 | | |
| Lithium chlorid | 0.08 | Lithium carbonate | 0.71 |
| Sodium bicarbonate | 69.20 | Sodium carbonate | 40.65 |
| Magnesium bicarbonate | 27.65 | Magnesium carbonate | 16.68 |
| Calcium bicarbonate | 107.56 | Calcium carbonate | 69.08 |
| Ferrous bicarbonate | 0.33 | Iron oxid | 0.02 |
| Potassium bromid | faint trace | Potassium sulphate | 10.68 |
| Sodium sulphate | 18.80 | Sodium sulphate | 11.14 |
| Sodium metaborate | small amt. | | |
| Mangano-manganic oxid | 0.14 | Alumina | 0.07 |
| Silica | 2.54 | Silica | 2.49 |
| Total | 251.77 | Total | 175.47 |

The Bureau of Chemistry analysis evidently is made from a sample of the big Soda Spring at Manitou, and it is with Professor Waller's analysis of that spring that we have made the comparison. The later analysis shows an increase in the iron, calcium, magnesium and sodium bicarbonates, but a small diminution in lithium and sodium chlorids. The new analysis shows a slightly stronger water than does the old, but we may agree with the bureau chemists that the two analyses correspond quite satisfactorily.

DEEP ROCK WATER, OSWEGO, N. Y.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. Silas H. Douglass, University of Michigan. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 0.01 | Magnesium chlorid | 10.24 |
| Lithium chlorid | trace | Calcium chlorid | 18.19 |
| Potassium chlorid | 0.40 | Potassium chlorid | 149.08 |
| Sodium chlorid | 112.98 | Sodium chlorid | 308.18 |
| Sodium sulphate | 3.32 | Sulphuric acid | trace |
| Calcium phosphate | trace | | |
| Calcium bicarbonate | 3.08 | | |
| Magnesium bicarbonate | 1.21 | | |
| Sodium nitrate | 0.70 | | |
| Sodium nitrite | trace | | |
| Sodium bicarbonate | 12.58 | | |
| Ferric oxid and alumina | 0.02 | Iron protoxid | trace |
| Silica | 0.61 | Silica | 71.70 |
| | | Loss | 1.78 |
| Total | 135.00 | Total | 559.17 |

The difference between these two analyses is very remarkable, that of the Bureau of Chemistry showing a falling off of more than 75 per cent. This great reduction is represented chiefly by sodium chlorid, 195 grains; silica, 71 grains, and potassium chlorid, 148 grains. This loss is partially compensated by the presence in the government analysis of the more useful ingredients, sodium sulphate, sodium bicarbonate and a minute quantity of lithium. The new analysis transfers the water from the saline-silicious to the more valuable saline-sodic-carbonated class of waters. In a recent letter to the author the manager of the spring states that as the government analysis was made from a sample bought in the open market he cannot vouch for its correctness. He sends an anaylsis of the spring, made in 1899, by George Archbold, A.M., M.D., Ph.D., in which the total solid contents of the water are placed at 201.67 grains per United States gallon. This analysis bears a much closer resemblance to that of the Bureau of Chemistry than to the older one of Professor Douglass.

ALLOUEZ MINERAL WATER, GREEN BAY, WIS.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. W. W. Daniels, Wisconsin State University, 1888. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | | |
| Lithium chlorid | trace | | |
| Sodium chlorid | 1.60 | Sodium chlorid | 4.26 |
| Magnesium chlorid | 0.99 | | |
| Magnesium sulphate | 4.27 | Sodium sulphate | 3.46 |
| Calcium phosphate | trace | Calcium sulphate | 0.11 |
| Sodium nitrate | 2.11 | Sodium phosphate | trace |
| Magnesium bicarbonate | 8.41 | Magnesium bicarbonate | 27.53 |
| Calcium bicarbonate | 18.43 | Calcium bicarbonate | 24.69 |
| Potassium chlorid | 0.17 | Potassium sulphate | 0.12 |
| Ferric oxid and alumina | 0.07 | Iron bicarbonate | 0.06 |
| Calcium silicate | 1.50 | Alumina | 0.17 |
| Silica | 0.45 | Silica and insoluble residue | 1.97 |
| Total | 38.00 | Total | 62.37 |

Allouez still may be regarded as an alkaline-saline-calcic water, although the Bureau analysis shows a marked falling off from that of Professor Daniels. The reduction is represented criefly by the bicarbonates of magnesium and calcium. It is partly compensated by the sulphate of magnesium in the new analysis.

In reply to a letter addressed to the spring company inquiring as to the possible causes of the discrepancy of the two analyses, the manager states that dishonest middlemen refilled Allouez bottles all over the country. This procedure is easily effected by replacing the crown cap after refilling the bottle. They are endeavoring to safeguard the water by covering the cap with strips. It is possible that the government chemists examined a diluted or adulterated sample.

GREAT BEAR WATER, FULTON, N. Y.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Dr. William Manlius Smith, 1890. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Magnesium chlorid | 0.73 | Magnesium chlorid | 0.47 |
| Lithium chlorid | trace | | |
| Potassium chlorid | 0.18 | | |
| Sodium chlorid | 1.01 | | |
| Ammonium chlorid | trace | | |
| Magnesium sulphate | 0.89 | Calcium sulphate | 0.72 |
| Sodium nitrate | 0.70 | Sod. and Potass. carb. | trace |
| Sodium nitrite | trace | | |
| Magnesium bicarbonate | 1.61 | Magnesium carbonate | 1.25 |
| Calcium bicarbonate | 7.25 | Calcium carbonate | 3.50 |
| Ferrous bicarbonate | 0.06 | | |
| Silica | 0.56 | | |
| Total | 12.99 | Total | 5.94 |

This is one of the few instances in which the Bureau analysis presents a larger solid content than does that used in advertising the water. Great Bear, however, is recommended simply as a table water. It loses no caste as a result of the government examination. It may, in fact, be regarded as somewhat improved.

CROCKETT ARSENIC-LITHIA WATER, SHAWSVILLE, VA.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Prof. Henry Froehling. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | trace | Ammonium nitrate | trace |
| Potassium chlorid | 0.60 | Sodium chlorid | 1.23 |
| Lithium chlorid | trace | Lithium carbonate | 0.07 |
| Magnesium bicarbonate | 1.74 | Magnesium carbonate | 1.18 |
| Calcium bicarbonate | 13.46 | Calcium carbonate | 5.90 |
| Sodium metaborate | small amt. | Barium carbonate | trace |
| | | Strontium carbonate | 0.09 |
| | | Copper carbonate | trace |
| | | Lead carbonate | trace |
| | | Zinc carbonate | trace |
| | | Manganese carbonate | trace |
| Potassium sulphate | 0.17 | Potassium sulphate | 1.25 |
| Sodium sulphate | 3.09 | Sodium sulphate | 1.86 |
| Magnesium sulphate | 4.59 | Magnesium sulphate | 3.04 |
| Di sodium arseniate | 0.19 | Sodium arseniate | 0.02 |
| Calcium silicate | 0.52 | Calcium sulphate | 2.25 |
| Ferric oxid and alumina | 0.06 | Iron sulphate | 0.04 |
| Potassium iodid | trace | Sodium iodid | trace |
| Sodium nitrate | 0.02 | Sodium bromid | 0.01 |
| Sodium nitrite | heavy trace | Aluminum phosphate | trace |
| | | Aluminum silicate | 0.12 |
| Silica | 2.53 | Silic acid | 1.29 |
| Total | 26.97 | Total | 18.35 |

The government analysis is a little stronger, quantitatively, but not so rich in a qualitative sense as that of Professor Froehling. The slight increase in lime salts in the new analysis covers the quantitative differences. On the whole, the two tables agree as well as could be expected. The Crockett water suffers no deterioration from the re-examination. The water may properly be termed a light sulphated-saline-arsenical water, but the designation of "lithia" ought to be dropped, as it would require at least 75 gallons of the water to yield one moderate dose of that drug.

BLUE LICK WATER, BLUE LICK SPRINGS, KY.

| New Analysis. Bureau of Chemistry. One U. S. gallon contains: Solids. | grs. | Old Analysis. Dr. Robert Peter. One U. S. gallon contains: Solids. | grs. |
|---|---|---|---|
| Ammonium chlorid | 0.13 | | |
| Potassium chlorid | 7.72 | Potassium chlorid | 1.39 |
| Magnesium chlorid | 40.55 | Magnesium chlorid | 32.39 |
| Sodium chlorid | 400.43 | Sodium chlorid | 512.85 |
| Calcium chlorid | 10.12 | | |
| Potassium bromid | 1.97 | Magnesium bromid | 0.24 |
| Potassium iodid | 0.01 | Magnesium iodid | 0.05 |
| Calcium sulphate | 27.00 | Calcium sulphate | 33.99 |
| Lithium chlorid | 0.43 | Potassium sulphate | 8.93 |
| Sodium metaborate | small amt. | Magnesium carbonate | 1.36 |
| Calcium bicarbonate | 31.61 | Calcium carbonate | 23.65 |
| Sodium nitrate | 0.16 | | |
| Sodium nitrite | faint trace | | |
| Calcium phosphate | faint trace | | |
| Mangano-manganic oxid | 0.21 | Silicic acid | 1.10 |
| Ferric oxid and alumina | 0.08 | Alum, lime phosphate, iron oxid | 0.36 |
| Silica | 1.05 | Loss | 17.72 |
| Total | 522.34 | Total | 634.03 |

It is not stated by the government chemists whether their samples were taken from the Upper or Lower Blue Lick Springs. The Blue Lick waters are all of the same class, but, as the bureau analysis resembles rather more closely the advertised analysis of the Lower springs, we have selected that for comparison. An examination was made of this water many years ago by Dr. Robert Peter, the state geologist. A careful comparison of the two tables shows a reasonably close agreement. The quantitative discrepancy of the analyses is covered by the loss in sodium chlorid in the government determinations. The Blue Lick water remains an excellent example of the sulphated-saline class.

It is now well known that mineral waters possess no mysterious or occult virtues in the treatment of disease. No mineral water will be accepted by the medical profession for alleged medicinal properties supported only by testimonials from bucolic statesmen and romantic old ladies. In these days of twentieth century exactness, it might almost be said that the most important thing about a mineral water is a trustworthy analysis. It is only by this that the practitioner is able to decide as to its merits and to prescribe it intelligently. It is, therefore, a matter of keen disappointment to learn by these new analyses how much mistaken we have been in regard to the chemical constitution of some of our best known waters. Let us not, however, be too hard on the spring proprietors. There is very little evidence pointing to intentional fraud; it can not be doubted that the present owners themselves have, in more than one instance, been deceived by analyses handed down from their predecessors. In forming conclusions in reference to the extremely unsatisfactory state of affairs developed by the Bureau of Chemistry investigations certain facts come up for consideration:

1. A great majority of the advertised analyses of our mineral waters were made many years since when methods were not so exact as they are at the present day.

2. Some mineral springs are sensibly influenced by the wetness or dryness of the season, both in strength and in volume; the greater the volume of the water the weaker it is in mineral ingredients; examinations of such springs at different stages would undoubtedly yield dissimilar results.

3. While many springs are of deep origin and show no apparent fluctuations in their rate of flow, we have no positive proof that even these have not become more or less modified in character during the long period since the old analyses were made. The subterranean aqueous current, which constitutes a spring when it reaches the surface, can not be counted on continuously to come in contact with earth strata which yield a uniform product to its solvent power. Underground streams, as well as those on the surface, are liable to change their course, and, while losing certain of their former contents, may acquire new ones.

4. The fact must not be overlooked that the government analyses were made in each case from samples purchased in the open market. It is, therefore, possible that some of the waters examined by the bureau chemists were spurious or adulterated.

5. The chemical ingredients set forth in the tables of contents of mineral springs represent hypothetical combinations only. No chemist maintains that the salts he sets down in his analysis exist in exactly that form in the water. He ascertains by his tests the various acid and basic ions existing in the water, and, as nearly as possible, in what amounts. He then reasons that they unite to form the salts which go to make up his hypothetical table of contents, which is presented as the analysis. It is hardly conceivable that any two chemists separately examining a specimen of spring water taken from its source, even at the same moment, would reach exactly the same result in stating the theoretical combinations. How much greater discrepancy might reasonably be expected in the case of analyses separated by periods of 30 or 40 years!

With all due allowance for the above considerations, however, it must be confessed that we are in a state of inexcusable ignorance regarding the chemical constitution of many of these agents. Mineral water therapeutics must remain in a backward and unsatisfactory state until this is remedied. All of our medicinal springs should be submitted to analysis at least once in ten years until we are able to arrive at a correct estimate of their potency, and whether they are gaining or losing in strength. No enterprising mineral spring proprietor, animated by a desire to put forth a reliable product, can object to the expense, repeated at intervals so widely separated. The decennial revisions of our works on materia medica and pharmacy should present a brief account of the mineral waters conforming to ethical rules, so that the medical practitioner may be in possession of as authentic and authoritative a source of information regarding these as he has in case of other therapeutic agents.

46 West Eighty-fourth Street.

**Bier's Hyperemia in Bone Tuberculosis.**—S. H. Westman, in *Dominion Medical Monthly*, states that this method of treatment of tuberculosis of bones and joints does not take the place of radical methods, where these are indicated, but it does lessen the frequency of severe surgical measures. In the great majority of cases it is pleasant for the patient, it relieves pain, it allows him use of the limb, it is easily applied and can be used by the physician himself, and, lastly, it affords a complete cure, with the best functional result.

# THE OATMEAL DIET IN THE TREATMENT OF DIABETES MELLITUS.

JAMES B. HERRICK, M.D.
CHICAGO.

In 1903 Carl von Noorden[1] advocated the use in certain cases of diabetes of a diet consisting of oatmeal, butter and a vegetable albumin. This method of treatment is commonly referred to, briefly, as the oatmeal treatment—Haferkur. To judge from the paucity of reports from German and other clinics, von Noorden's claims for the diet are generally viewed either with indifference or skepticism. This paper will attempt to show what the diet is, the method of its use, the claims made for it by von Noorden, and how far these claims seem justified by the experience of others, including that of the writer.

*The Diet.*—The diet consists of 250 grams of oatmeal, 250 to 300 grams of butter and 100 grams of some vegetable albumin, such as roborat. For this latter substance, six to eight eggs—or the whites of the eggs—may be substituted. The oatmeal is cooked thoroughly with water for about two hours, the butter and eggs are well stirred in when the oatmeal is nearly "done." Or the whites of the eggs may be well beaten and stirred in after the cooking has stopped or even when the oatmeal is cold. Salt is added to suit the taste. This constitutes the food for one day for an adult. It is given in from three to eight portions, von Noorden advising feeding every two hours. He occasionally permits a small amount of clear coffee or a few sips of sour wine with some of the meals, to relieve the monotony. The oatmeal may be served as a rather thin soup or gruel, as a thicker mush or, as I have lately done, as fried mush.

*Von Noorden's Claims.*—The claims made are that in many cases of the severer types of diabetes, especially those in which the ordinary strict diabetic diet is failing to rid the urine of sugar, and when the persistence of the acetone bodies in the urine and the presence of suggestive symptoms make one fear that coma is impending, the use of this diet will cause a remarkable lowering in the amount of sugar passed and a disappearance of the acetone bodies. Subjectively, the patients are better. And, again, an advantage is seen in that an increased tolerance for carbohydrates develops and an amount of starchy food that before would have caused an increase in the thirst and saccharine polyuria, is now ingested without these unpleasant results, but with apparent benefit in the way of increase in weight and strength. The warding off of threatening coma and aid in establishing a carbohydrate tolerance are, therefore, the chief claims made for the diet.

*Selection of Suitable Cases.*—It is to be understood that no claim is made that the milder forms of diabetes, such, for example, as are commonly seen in the adult obese, are benefited. These patients may be made worse. It is in the severer forms, where emaciation, weakness, polyuria and glycosuria persist in spite of careful diet and where a study of the urinary content in acetone, diacetic and oxybutyric acids and ammonia shows acidosis with threatening coma that the diet has its greatest field of usefulness. And even here it is not to be looked on as infallible. In some cases it fails absolutely. In others it rids the urine of sugar and the acetone bodies, wards off coma, but no great degree of tolerance is established; in the most favorable cases the urinary signs of acidosis disappear, tolerance is established, and a great improvement results in the general condition of the patient. It is to be noted, therefore, and expressly emphasized, that the diet is not one for indiscriminate use, and that selection of cases and individualization is essential. Unless this is remembered not only will there be great disappointment at results but there may be harm done, milder cases being made worse.

*Resumption of Ordinary Diet.*—The diet is to be maintained for one to two weeks. The resumption of the ordinary diabetic diet should be gradual. If too abrupt, increase in sugar and symptoms of coma may follow. I have usually followed the plan of cutting out one of the regular oatmeal meals and substituting for it, say, a cup of broth with an egg and some green vegetable, such as celery or lettuce. The next day the oatmeal is omitted twice and a little beefsteak or fowl is allowed, with, perhaps, some salad, spinach or cabbage. Gradually the return to the ordinary diabetic diet is accomplished, enough, however, of the oatmeal being retained to furnish a fair amount of carbohydrate. Then, feeling one's way, an occasional potato is added, sour fruits and, cautiously, perhaps a little bread, the urine being watched carefully all the time and close tab kept on the weight. The patient is thus gradually brought back to a strict diabetic diet, i. e., a proteid and fat diet with an amount of carbohydrate sufficient, if possible, to guard against acidosis and yet not sufficient to produce marked glycosuria. This can be accomplished very well in some cases; in others one must be content to see the patient hold his own in weight, pass urine free from diacetic acid, though it may contain, daily, a few grams of glucose. The important point, after all, is not so much whether the patient is passing sugar in the urine, as whether there is gradually accumulating in the body an excess of acid robbing it of its alkali, acting as a toxin, and whether the output of sugar, the daily loss of energy through the urine, is compensated for by a sufficient intake of food that is properly utilized.

Now, the oatmeal diet contains in round numbers 3,200 calories, fat 2,050, proteid 400, carbohydrate 775. The diet is sufficient, therefore, for an ordinary man, not over-active; sufficient to maintain bodily functions and even to allow for some loss in the way of sugar in the urine. In fact, without the oatmeal there is, perhaps, a sufficiency of heat units.

*Objections to the Diet.*—Objections to this diet have been urged. In the first place, it is not, to put it mildly, over-appetizing, and there may be difficulty in getting patients to try the diet at all or to continue it for two weeks. My first experience in prescribing it was far from encouraging. A lady of about fifty, reduced in weight to sixty-eight pounds, intellectually bright and intelligent, with a diabetes of a malignant type and progressing in spite of the utmost care in the dietetic and other management, said to me, after taking one or two meals of the von Noorden diet: "Doctor, I will die before I will taste another spoonful of that oatmeal mush." I may add that she had her way about it. In general, however, I have experienced little difficulty in putting patients on the oatmeal diet and in keeping them there for from one to two weeks.

In a few instances only, an early loathing of the food has occurred or a nausea and vomiting, making it necessary to stop sooner than planned or to cut out a few of the meals, substituting some non-carbohydrate food in their place. And in some cases the addition to the

1. Haferkuren bei Schwerem Diabetes Mellitus, Berl. klin. Wochschr., No. 36, 1903.

oatmeal diet of a little clear coffee, sour wine or something green, like celery, lettuce or spinach, has relieved the monotony and overcome the anorexia, nausea or vomiting.

A hint that has proven valuable was given me by a physician who was under my care for diabetes. He suggested that the oatmeal might be more palatable if it were made into balls like meat-balls or sausage cakes and then fried just enough to brown the outside a little; if it were, in other words, prepared after the manner of fried mush. The taste of the burnt or browned coating is rather pleasant and makes the food far more palatable than when it is served either as a rather thick mush or as a thinner soup or gruel. A little explanation to patients as to what one hopes to accomplish by the diet, thus securing their intelligent cooperation, is a valuable adjunct to the successful carrying out of the plan. It is often much more satisfactory to treat the patient in the hospital than at his home or in one's office. The objection, therefore, that the diet is intolerably unpalatable is met by care in the preparation and manner of administering the food, by securing the cooperation of the patient, as well as by the fact that experience shows that most patients can and do take this food for many days without complaint.

A second objection that the large amount of fat might increase the acetonuria is met by the clinical fact, supported by many observations, that the exact opposite happens, the amount of acetone distinctly lessens.

Again, the feeding of 250 grams of oatmeal, representing 150 grams of carbohydrate starch, would seem at first blush absolutely irrational and destined to aggravate the difficulty in every way. The answer again is that in these selected cases of the severer type the exact opposite occurs, the sugar diminishes in quantity, the acetone bodies are reduced in amount, thirst and polyuria are markedly lessened, there is an increase in weight and strength and a general feeling of well-being.

*Explanation of Action of the Diet.*—The explanation for all this is not easy. That a too rigid exclusion of carbohydrates may lead to acidosis and coma is a matter of common knowledge. Possibly the starch of the oatmeal may furnish the oxygen molecule that is needed for the process of oxidation by which the oxybutyric acid is converted, in turn, into diacetic acid, acetone, and finally into water and carbonic dioxid, this molecule of oxygen in the oatmeal being perhaps rather loosely bound or for some other reason easily available. The oatmeal, therefore, causes prompt increase in the oxidative process just referred to, with corresponding reduction in the acidosis with its urinary evidences.

Why sugar is not increased in amount is not known. Are all starches alike? Are the starches from rice, potato, wheat, rye, oatmeal, etc., identical chemically and structurally, and is their metabolic change in the body always one and the same chemical process? Mosse[2] accomplished remarkable results in diabetes by a potato diet; Dühring by a rice diet. Will the use of a single kind of starch or other carbohydrate be better tolerated than a mixing of the varieties? Or may it be, as von Noorden suggests, that one kind of starch, e. g., oatmeal starch, is better tolerated than another? Certain it is that in some of these cases of diabetes, undergoing treatment by the oatmeal diet, one can not indiscriminately and abruptly substitute another carbohydrate, such as cane sugar or wheat starch, for the oatmeal. A prompt rise in the glycosuria is the result. These facts suggest interesting fields for investigation along the line of physiologic and clinical chemistry. That the oatmeal does not pass through the body unchanged is shown by the investigations of Lipetz from Naunyn's clinic, to be referred to later on.

*Practical Results.*—Von Noorden, in 1903, had an experience with this diet in about one hundred cases, reaching the conclusions already cited. He gives the histories of five patients representing various types from the standpoint of this diet.

CASE 1.—A boy of 18, on ordinary strict diet, passed daily 50 grams of sugar with acetone and diacetic acid. On the oatmeal diet the sugar disappeared, as did the diacetic acid; the acetone was represented by only the normal amount. There was an increase in weight. On gradual resumption of ordinary diet it was found that tolerance had been established, sugar not reappearing in the urine.

CASE 2.—Age 20. Coma seemed imminent. On oatmeal, coma averted, sugar reduced from 100 grams daily to less than 5 grams. Gain in weight. Yet tolerance not established for sugar again present in urine when ordinary diabetic diet is resumed. Net result, averting of coma and improvement in general condition.

CASE 3.—On oatmeal diet sugar greatly reduced and general condition as to strength, weight, etc., much improved, yet sugar never disappeared from urine.

CASE 4.—No influence on sugar output or on acetone bodies. Tolerance not established.

CASE 5.—Light case of diabetes, not tolerating oatmeal diet as well as ordinary diabetic diet. "Light cases without diaceturia, according to my experience, tolerate the oatmeal treatment poorly and show a lessened tolerance if the diet is persisted in for a long time" (Noorden).

Sigel,[3] from Ewald's clinic, concludes that the oatmeal diet is a valuable therapeutic agent. His first case is instructive.

A patient of 33 years, on a carbohydrate-free diet, passed daily 50 to 70 grams of sugar. Bicarbonate of soda did not influence the output of sugar or acetone. After a week of oatmeal the sugar was 16 grams. Then peameal was used instead of oatmeal, and the sugar rose to 74 grams. Then on ten days of oatmeal it dropped to 4 grams. The patient was then gradually brought back to the ordinary diabetic diet, containing, however, considerable oatmeal gruel. Sugar was passed in amounts varying from 20 to 40 grams a day, but there was a distinct gain in general bodily condition and the acetone bodies were absent from the urine. An interesting feature of this case, and one seeming to point toward an essential difference between the starches as found in various foods, is the intolerance of this patient for the peameal and the tolerance for oatmeal.

In a discussion of Dr. Tyson's paper, read before the Section on Pharmacology and Therapeutics of the American Medical Association, 1907, Dr. G. M. Linthicum, of Baltimore, cites a case that he had treated in which a diabetes of a malicious type, in a boy of 8 years, was checked, at least temporarily, by the oatmeal diet, though it had resisted the restricted diet and drugs.

Not all observers report favorably on this method of treatment. Lipetz,[4] from Naunyn's clinic, seems convinced, *a priori*, that there is something wrong about the paradoxical statement that such a large amount of carbohydrate as 250 grams of oatmeal can be given to a diabetic and the sugar not increase but actually disappear. He investigated to see whether the starch was absorbed, whether the patients were not in reality living solely on the fat and proteid of the diet. He convinced himself that the starch does not pass through the ali-

2. Rev. de Méd., xxii, p. 107, 1902.

3. Berlin klin. Wochschr., No. 1, 1904, p. 19.

4. Zeit. f. klin. Med., lvi, 1905, p. 188.

mentary tract unchanged. He suggests the possibility that through intestinal bacterial action the oatmeal is changed into some form—lower fatty acids and oxyacids—that when absorbed is incapable of transformation into sugar, perhaps even in some way lowering the sugar output. An increased number of bacteria in the stool of some patients who were on the oatmeal diet favors, he thinks, this hypothesis. His practical results—the treatment, as it seems to me, not carefully carried out nor for a long enough time—are not as favorable as von Noorden's. He has seen acidosis lessen and glycosuria diminish, but finds no permanent improvement and no advantage over the ordinary diets. In coma the main reliance is placed on heavy doses of alkalies. He attributes the good results of the oatmeal treatment to the fact that in spite of a rich carbohydrate intake little or no carbohydrate is absorbed as such. Whether the absorbed products of fermentation of the carbohydrate exercise a specific action he can not decide, for he rather contradictorily remarks, he has never had a good result.

Magnus-Levy,[5] in discussing Langstein's paper, spoke rather disparagingly of this treatment, saying that in severe cases he has had none too happy results. Langstein[6] from an experience with children in Heubner's clinic has been favorably impressed with this treatment; he believes that the oatmeal diet brings about results that can not be obtained with other carbohydrate.

Mohr[7] says he is firmly convinced that with the oatmeal diet good results are often obtained. In the same discussion Hirschberg emphasizes the value of this diet in lessening acidosis, though he has seen failures because of the inability of the patient to ingest the food for any great length of time.

*Personal Experiences.*—My own experience with this method of treatment can not be stated statistically. An early intense skepticism as to the power of the stomach to tolerate twenty to fifty monotonous and far from tempting meals, an inability to understand the disappearance of sugar from the urine when such large amounts of starch were fed, and a failure to grasp the explanation of the paradox that the severe case is made better while the mild case is made worse by the same treatment have yielded when the trial has been made. Yet the wonder at it all still remains. Explanations as to how this is brought about are far from satisfactory. The carbohydrate that may be compared to a poison for some mild diabetics has a helpful effect on the severer forms, in which forms it would seem to have its harmful influence counteracted by some substance, perhaps the acid bodies, and these substances in turn, also toxic, have their baneful effects neutralized by the carbohydrate, i. e., they seem mutually antagonistic or antidotal.

CASE 1.—A man, 37 years of age, with neuralgic pains in his back and legs and local symptoms due to a small ischiorectal abscess, was unaware that he had diabetes. Symptomatically, the case was a mild one, there being little or no complaint of great weakness, and no known loss of weight from his normal 130 pounds. Inquiry elicited the fact that he had for several years drunk water freely, at times one or two glasses an hour, and was subject to boils. Polyuria was not noticed. Examination of the urine, Jan. 1, 1906, showed 6 per cent. of sugar in the 1,800 c.c. of urine; i. e., 108 gm.; sp. gr. 1.040; diacetic acid present. The table shows, in brief, the result of the treatment:

| Date. 1906. | Diet. | Amount of Urine, c.c. | Specific Gravity. | Amount Sugar, gms. | Diacetic Acid. |
|---|---|---|---|---|---|
| January 1. | Full ward diet | 1800 | 1040 | 108 | +. |
| January 3. | Ordinary diabetic non-carbohydrate diet with two slices of bread daily | ..... | ..... | ..... | .... |
| January 7. | Ordinary diabetic non-carbohydrate diet with two slices of bread daily | 2300 | 1038 | 115 | ? |
| January 9. | Ordinary diabetic non-carbohydrate diet with two slices of bread daily | 1400 | 1030 | 98 | 0 |
| January 11. | Oatmeal diet | ..... | ..... | ..... | .... |
| January 18. | Oatmeal diet | 1200 | 1032 | 8.4 | 0 |
| January 19. | Oatmeal diet | ..... | 1020 | 2.0 | 0 |
| January 20. | Oatmeal diet | ..... | 1025 | 1.5 | 0 |
| January 21. | Oatmeal diet with meat once daily, coffee once a day: celery, lettuce and cabbage. | ..... | 1022 | 1.5 | 0 |
| January 22. | Oatmeal diet with meat once daily, coffee once a day: celery, lettuce and cabbage. | 650 | 1020 | 0 | 0 |
| January 23. | Oatmeal diet with meat once daily, coffee once a day: celery, lettuce and cabbage. | 770 | 1015 | 0 | 0 |
| January 24. | Oatmeal diet with meat once daily, coffee once a day: celery lettuce and cabbage. | 800 | 1015 | 0 | 0 |
| January 28. | Oatmeal, two or three times a day, with proteids and fats more freely. | ..... | ..... | 0 | .... |

This is one of the cases in which, though the type was apparently mild, the result of the diet was favorable. The doubtful Gerhardt reaction, it will be noted, had disappeared from the urine on the ordinary diabetic diet.

CASE 2.—Mrs. M., 62 years old, fleshy. Psoriasis for two years. First noticed thirst three years ago. Comes for treatment for constipation; mucus in stools; vague abdominal and general pains. In the oatmeal diet the sugar was reduced from 106 gms. to *nil*.

Here, again, a case of moderate severity shows a favorable result, both in the elimination of sugar from the urine and in an increased tolerance.

CASE 3.—In a male of 66 years, with a diabetes of mild type that had existed for six to seven years, the small amount of sugar, less than 2 per cent., disappeared under the von Noorden diet, but the patient left the hospital with a trace of sugar that appeared when the ordinary diabetic diet was resumed.

CASE 4.—Within a month, in a long standing diabetes of the mild type, the oatmeal diet has slightly reduced the small amount of sugar (40 gm.), but has not caused its disappearance.

In several office patients suffering from mild diabetes I have tried this plan of treatment without producing any marked effect on the glycosuria. In my cases, therefore, of the mild type, the oatmeal diet has occasionally caused a prompt disappearance of sugar from the urine and has seemed to be of service in establishing tolerance; in other cases sugar has promptly reappeared when other food has been added to the dietary, i. e., NO tolerance has been established; in still other cases no impression has been made on the disease. So far, however, I have seen no evil result from the use of this diet, even in the milder cases that von Noorden classes as unsuitable for this plan of treatment.

CASE 5.—A man, aged 51 years, had passed sugar almost constantly for about three years. Thirst and polyuria had, at times, been extreme. He was greatly emaciated and very weak. Ordinary diabetic diets had been tried, but there had been little or no improvement. On the oatmeal diet, the sugar entirely disappeared in eight days, the urine became normal in amount and specific gravity. A moderate tolerance was established, so that on cautiously adding bread and potatoes to the ordinary diabetic diet no sugar appeared for a time and there

5. Deutsche. med. Wochschr., No. 12, 1905.
6. Deutsche med. Wochschr., No. 12, 1905.
7. Mohr in discussion of Langstein's paper. Ibid.

was a gain of 4 pounds in weight. The patient expressed himself as feeling better than since his diabetes began. Sugar, however, appeared when a fuller diet was taken, and to-day, while the patient is able to be actively at work, he notices neuralgic (neuritic?) pains, is somewhat weak and is 8 pounds lighter than after the Noorden diet. Another oatmeal course would probably be of benefit.

CASE 6.—A man, of 58, consulted a surgeon, in 1903, for a carbuncle on the back of the neck. Sugar was found in the urine and only partially disappeared under a non-carbohydrate diet. This fall, 1907, the patient again returned because of a sluggish ulcer of the foot. He was weak, greatly emaciated, thirsty, and was passing 75 gms. of sugar a day. I advised the oatmeal diet, with the result that the sugar was reduced in four days to 3 grams. Mere traces were present during the next two weeks, though he was gradually brought back to a proteid and fat diet, some oatmeal and potato also being allowed.

CASE 7.—In a male of 42 in the County Hospital with marked polyuria, emaciation, asthenia and excessive thirst, there was always, even under a strict diabetic diet, over 4 per cent. of sugar. On one examination the interne reported 12 per cent. Acetone and diacetic acid were present. There was, in addition to the diabetes, a complicating apical tuberculosis. The patient was losing ground rapidly. On the oatmeal diet the urine decreased in quantity from 3,800 c.c. to 2,000 c.c., and the sugar and acetone bodies disappeared. Four weeks later and after ordinary diet had been taken for several days, he succumbed to an acute pulmonary edema (acute miliary tuberculosis?).

CASE 8.—E. D. M., 42 years old, an alcoholic, was admitted to the Cook County Hospital because of a foot-drop from neuritis, presumably diabetic in origin. He developed also an ischiorectal abscess that was treated surgically. Emaciation and weakness were marked, and to judge from the symptoms, diabetes had existed four months and had been progressing rapidly. The urine at one time amounted to 7,830 c.c., and sugar 313 gms. per day. Diacetic acid was abundant. On rather large doses of codein, heroin, antipyrin and bicarbonate of soda, all given at the same time, with a proteid diet, to which a little white bread was added, there was a marked improvement, the sugar being reduced to 22 gms. But in a few days it went up to 52 gms. November 6, 1907, I suggested a trial of the von Noorden diet. The urinalysis of November 9 is 2,000 c.c.; sp. gr. 1.014; no sugar. This was the first time in four weeks that no sugar had been found. For three weeks, and though ordinary diabetic diet has been resumed, there has been no sugar found, or only very small amounts. Diacetic acid has not reappeared.

Nothing has been more surprising or more gratifying than the effect of this diet in the diabetes of the young, a form notoriously hard to manage and of unfavorable course. I have seen in the last twelve months four girls under 17 years of age suffering from typical diabetes mellitus. In each case the disease had been recognized by the attending physician and a strict diabetic diet only had been allowed. Some amelioration of symptoms had followed, but there was still in each case much thirst, polyuria and glycosuria, and the patients bade fair to go the usual way of the youthful diabetic. In each instance the response to the oatmeal diet was prompt in that the amount of urine became decidedly less, its specific gravity was reduced, and in three of the cases sugar entirely disappeared for a time. Thirst was less annoying, there was a gain in strength and weight.

In one case (Case 9) the diet was poorly tolerated, nausea occurring, and I judge from the doctor's letter that there was very early a relaxation in the matter of diet and a return of all the old symptoms. The disease in this girl of twelve began suddenly, three weeks before, with extreme thirst, increased appetite, rapid loss in weight, languor. She had passed as high as one gallon of urine in a day and it was rich in sugar and of a specific gravity of 1,045. The doctor writes: "Our patient got along nicely while she was on her diet, which I have found lately was only a few days. The parents did not watch her carefully and she ate things that were forbidden." This emphasizes the fact that the determined cooperation of the patient, together with that of the friends in attendance, is extremely important in the carrying out of any dietetic régime in diabetes. This is particularly true in the case of children, who should be watched carefully. In general, the hospital is the safer place for the initiation of any rigorous diet. The first few days of strictest diet are best passed under the eye of the nurse who is cold to entreaty and unflinching in her duty.

CASE 10.—T. D., a girl of 15, was brought to me by her physician, Feb. 7, 1907. Symptoms would indicate that the diabetes had existed four or five months. There was always sugar, even on restricted diet, and the thirst, fatigue and progressive emaciation, with persistent saccharine polyuria, showed that the case was progressing unfavorably. After twelve days of the oatmeal diet the doctor wrote: "To-day's urinalysis is as follows: Sp. gr. 1.012, slightly acid, no albumin and absolutely no sugar." This patient's tolerance was increased by the diet, and for a long time no sugar was present in the urine. But gradually, on the fuller diet, sugar has appeared. Nov. 25, 1907, her physician wrote that she was not doing so well. She had gained 3 pounds in weight, but was weak; the urine contained sugar and some albumin; sp. gr. 1.032, and amounted to 3,000 c.c. for twenty-four hours. The prompt response to the strict diet was, however, most gratifying. Another rigid course should now be prescribed so that tolerance may, if possible, again be established.

CASE 11.—Elizabeth B., 10 years of age. Two months ago had a slight indisposition attended by a little rise in temperature, some epigastric tenderness and a faint yet distinct icterus. (Query: Was there some acute infection of the pancreas at this time?) Six weeks later she became thirsty. Her father, a physician, examined the urine and found 4.000 c.c.; sp. gr. 1.040, with a large amount of sugar. On a restricted diet the amount of urine came down to 1,500 c.c., but it had been for two weeks persistently high in specific gravity; always contained about 5 per cent. of sugar. The child was weak. She was brought to me Dec. 27, 1906. Aside from a barely palpable liver and a confirmation of the doctor's urinalysis, diacetic acid being found, the examination revealed nothing worthy of note. The oatmeal diet was begun at once. Jan. 2, 1907, she came to me again. The urine for twenty-four hours was 1,000 c.c., and contained some acetone but no sugar. The sugar had entirely disappeared after three days of the oatmeal diet.

June 14, 1907, I again saw her in the office. The report showed that no sugar had been present in the urine from January 1 to June 1. Then for three days there was a little sugar. On the von Noorden diet the sugar had again promptly disappeared. The patient looked well; weight, 70 pounds. She felt strong and was attending school. There was no nocturnal urination. The amount of urine during April and May had averaged 30 ounces. Then at the time of the reappearance of sugar the amount had run up to 48 ounces. Daily examinations had been made for six months. The diet had been the diet described in the quotation from the letter of February 25.

Nov. 20, 1907. "Yours of the 18th instant at hand, and in reply will say that Elizabeth has continued in much the same condition she was when you saw her last. Occasionally a little sugar shows in her tests, which are still made every day. The sugar, however, is never present for more than three days at any time since ten months ago. The last two times it was not present for more than twenty-four hours. She has gained 8 pounds in the last ten months and is going to school. Her appetite is quite variable, eating about one good square meal in the day. Her bowels are quite regular, color dark to light brown. Urine about 32 to 40 ounces in twenty-four hours. There has been on the average about one day in the week

showed ½ of albumin on boiling; but it should never when she has a pale, tired expression, dark color under the eyes and complains only of being tired. I feel very anxious about her at such times, yet even then there is no sugar present. The tenderness over the pancreas has not returned and she never complains. Only when she has those bad days, if asked, will say she is tired. She is eating gluten bread twice a day and buckwheat cakes for breakfast, fruits and nuts as she cares for them. Meat and eggs all we can induce her to eat—no milk except cream in weak tea or weak coffee. I have never put her on the von Noorden diet but one week since you first saw her, and that was eight months ago. I feel very anxious about her at times when she looks so pale and languid."

This result is, it seems to me, remarkable. It is better than any other obtained by me in the case of diabetes in a child on other diets. One can not say that recovery has occurred; one may join with the father in hoping for it. But an amelioration of symptoms with such a marked general improvement would stamp the treatment that was efficacious in bringing about such an effect as a most valuable one.

I am sure Dr. Croftan, who also saw this patient, will agree with me in ascribing to the oatmeal treatment the sudden checking of the onward progress of the disease; and this must be one of the cases that has induced him to say[8] very aptly: "No case of juvenile or adolescent diabetes should be deprived of the benefits of the oatmeal cure."

CASE 12.—M. B., aged 17 years. Thirst and polyuria noted Oct. 10, 1906. October 20 her physician found approximately 5 per cent. of sugar in the 6 quarts of urine. On a strict diabetic diet the amount was reduced to 5 pints. November 23, when I advised the use of the oatmeal diet, there were 400 gms. of sugar in the 5 quarts of the preceding twenty-four hours. Within four days the urine was reduced to 1 pint, with a trace only of sugar. Up to February, 1907, she averaged 2 to 3 pints of urine in the twenty-four hours, there being no sugar for about seven weeks. During this time she was on the more liberal diet.

On February 13, 1907, there were 52 grams of sugar in 1,300 c.c. of urine. This again disappeared on the oatmeal diet. To condense the subsequent history, usings the words of her physician, as long as she was careful about diet, she did well, sugar generally ranging from 0.5 to 2 per cent. For seven or eight weeks after the oatmeal diet was begun there was no sugar whatever. The parents insisted on her dancing in public against the protests of her physician, and grew careless as to her diet, the case finally passing into the hands of an advertiser and being lost track of, the last record, Oct. 2, 1907, showing 5 per cent. sugar in a specimen, with a specific gravity of 1.033, and containing acetone and diacetic acid in abundance.

In conclusion I would in the main confirm von Noorden's claim for the oatmeal diet. While occasionally the stomach will rebel and refuse to tolerate this food for any great length of time; while the diet is not suited to all cases, being of least avail in the milder forms; while it fails even in some of the severer types, and while no claim for a cure of diabetes can be made, this diet still remains a most valued therapeutic agent for the warding off of impending coma in the severer types of diabetes and for assisting in the establishment of a tolerance for carbohydrates. In the milder types of diabetes I have so far seen no ill effects follow its use, but the benefits have been trifling. My experience in using it in the diabetes of moderate severity has in general been favorable,it being of especial help in establishing tolerance for carbohydrates. In the diabetes of children, if employed early, it seems to exert an usually favorable influence.

8. Clinical Therapeutics, Second Edition, p. 130.

# THE IMPORTANCE OF AN OCULAR EXAMINATION IN PREGNANT WOMEN MANIFESTING CONSTITUTIONAL SIGNS OF TOXEMIA.*

WILLIAM CAMPBELL POSEY, M.D.
AND
JOHN COOKE HIRST, M.D.
PHILADELPHIA.

The value of an ocular examination in renal disease and in degeneration of the blood vessel walls is now generally recognized by clinicians, and no study of a patient suspected of either of these conditions is regarded as complete without ophthalmoscopic aid. On account of the liability of pregnant women to disease of the kidneys, obstetricians not infrequently request an examination of the eye-grounds when albumin appears in the urine, and in event of changes being found there, give due consideration to them, for retinitis albuminuria gravidarum is a well recognized disease, and its prognostic and clinical importance is properly valued.

Pregnancy may, however, be complicated by a serious toxemia and the urine not show any trace of albumin. This happens when the liver, or other organ apart from the kidney, is unequal to the task put on it by the excessive tissue changes which accompany pregnancy, or when the kidneys, though diseased, have not as yet excreted albumin. This atypical and often obscure form of toxemia manifests itself in early pregnancy by pernicious vomiting; later in persistent headache, failing vision, muscæ volitantes, epigastric pain and restlessness. Repeated examinations of the urine for albumin being negative, the obstetrician is thrown off his guard, and regards the symptoms as local and of no particular import until convulsions occur.

It has been claimed by some that though the urine does not contain albumin in these latent cases of toxemia, a toxic state of the system may be diagnosed by the consequences of faulty metabolism, which may be obtained from the urine by the quantitative estimation of the urea excreted. The practical experience of one of us (Hirst), however, does not substantiate this assertion.

In the first place, it is impossible to estimate the quantity of urea ordinarily excreted in the urine which goes to the fetus; again, without an examination of all the urine, feces, and other excreta in any twenty-four hours, no accurate idea of the relative amount of urea in the urine can be formed; and finally, the amount of urea found in the urine of any patient, from day to day, varies within such wide limits that any conclusions are misleading.

Careful studies which were made on groups of patients at the maternity of the University of Pennsylvania, have indicated the unreliability of the urea test, for it was found that the urea varied from 0.1 per cent. to 3.5 per cent. in these patients, each of whom received exactly the same amount of food. Though the estimation of urea as an independent test is misleading, it is undoubtedly of value when taken into consideration with the presence or absence of albumin, as when albumin is present the urea percentage probably will be below normal; thus, in the test cases just mentioned, it was found that those patients excreting an average of 3.5 per cent., or about 35 gms. a day, were those whose urine

* Read before the County Medical Society of Philadelphia.

be relied on as the sole guide to the patient's condition.

In these doubtful cases, therefore, cases presenting vague general symptoms with negative results from urine examinations, any corroborative evidence of actual toxemia is of the greatest value. It is in this emergency and under these conditions that an ophthalmoscopic examination is particularly indicated, and it is time that obstetricians should appreciate two facts, first, that changes in the eye-grounds which have been occasioned by renal disease, and are almost certainly diagnostic of renal disease, may precede the presence of albumin in the urine; and second, that the ophthalmoscope may give evidence of disease of organs other than the kidneys which has been excited by the toxemia of pregnancy.

While the renal condition which arises in pregnancy is an acute one, it is not unlikely that chronic nephritis may have existed in many cases prior to pregnancy. An examination of the fundus under these conditions reveals in most instances disease of the retinal vessels and serves to put the obstetrician on his guard. The usual ophthalmoscopic picture of the renal disease of pregnancy, retinitis albuminuria gravidarum, is that of other varieties of Bright's disease, consisting of a well-marked inflammation of the optic nerve and retina with extravasations and hemorrhages. This form of retinitis occurs most frequently in primiparæ, though among 19 cases seen by Nettleship, the ocular inflammation occurred during the fifth or a subsequent pregnancy in no less than 14; in 4 of the remaining 5 cases it came with the first pregnancy.

The ocular symptoms of the toxemia of pregnancy other than that occasioned by nephritis have not as yet been grouped into particular types; indeed, it may be said that the ocular symptoms of toxemia and autointoxication in general, quite apart from the toxemia of pregnancy, have as yet received but little attention from ophthalmologists. Uhthoff has classified them,[1] and Elschnig,[2] de Schweinitz,[3] and others have contributed valuable papers on the subject, but the whole field is still largely unexplored. There have been, however, a certain number of cases cited of ocular lesions occurring in pregnancy without the presence of albumin in the urine, all of which manifested general symptoms which pointed to the existence of a general toxemia.

Arnold Knapp[4] recently reported 10 cases where the optic nerve and retina during pregnancy and labor showed changes which differed from albuminuria gravidarum. Of this number Knapp thought 7 were complicated by sepsis, but the remaining 3 occurred with other complications of toxemia and were attributed by him to that cause. The brief report of his cases is as follows:

CASE 1.—Patient, aged 32, had five children in a period from eleven to five years ago. She then had four abortions. She is now in the eighth month of pregnancy. Six weeks ago suffered from severe headache and vomiting. Five weeks ago the right eye became blurred, which was shortly followed by an involvement of the left, and in one week both eyes were blind. She has had no convulsions. The headache and vomiting have ceased. Urine examination shows sp. gr. 1.020; faint trace of albumin; proportion of urea nitrogen greatly reduced.

*Examination.*—Both pupils widely dilated and immobile; no perception of light in any part of the field. Both optic discs are white; outlines indistinct. Arteries narrow. There is some edema of the retina in the macular region. On July 20, labor was induced, and a dead child delivered. Mother died of septicemia.

CASE 2.—In preceding pregnancy there was loss of sight, becoming worse after labor for three weeks; it then improved, but there remained asthenopia. At present, in eighth month of pregnancy, there is albuminuria, blurred vision, optic nerves white and ill-defined; field normal.

CASE 3.—Primipara. Three months ago her vision was blurred for two weeks. She then had headache. Now near term the legs are swollen; the urine contains some albumin; optic nerves distinctly white; right, blurred; nasal half, swollen; left, flat; vision and field normal.

In addition to these observations, Knapp has often been impressed by the frequent appearance of pale optic nerves in women, often with normal vision, who have borne children, and he raises the query whether this may not be the evidence of some toxic influence during preceding pregnancies.

Reich has seen marked choked disc in a pregnant woman, which terminated in complete recovery, and Cohn has recorded two instances and Uhthoff four of chronic retrobulbar neuritis with central scotoma in pregnant women. Other cases have been reported[4] by Kipp, Valude, Power, Lanford, Knaggs and Ole Bull.

According to Groenouw, all diseases of the optic nerve occurring in pregnant women have much in common. Thus, as a rule, the disturbance in vision does not begin before the fourth month of pregnancy, though at times it may not appear until in the seventh to the tenth month. Valude's is the only case in which the commencement of the eye affection fell in the first month. In this instance a 30-year-old woman suffered from a visual disturbance of the left eye that was always worse during menstruation, which had dated from her first pregnancy, nine years before. In the second pregnancy the vision of the left eye became affected in the first month, perception of light and darkness alone remaining. Two months later the vision in the right eye also became affected, sinking to 1/10. The ophthalmoscope showed consecutive atrophy of the optic nerve on both sides. Labor was artificially induced, and thirteen days later vision in the right eye rose to 2/3, though that in the left eye remained the same.

Groenouw believes that the causal connection between the disease of the optic nerve in these cases and pregnancy is proved by the fact of the recurrence of the ocular affection with each pregnancy. He avers also that the origin of the neuritis can scarcely be due to uremia, on account of its slow progression, its long duration and the absence of albumin in the urine, and attributes it to an autointoxication acting similarly to that which is observed in affections of the optic nerve, such as are described by Uhthoff as occurring during labor and lactation.

Nettleship, similarly, in referring to a class of cases observed by him in whom sight failed soon after confinement, but finally returned to a greater or less degree, is of the opinion that a link, perhaps, is furnished between neuroretinitis from loss of blood, which, after all, may be in a sense toxic, optic neuritis in puerperal polyneuritis, uremic blindness and other more acute examples of albuminuric retinitis. He says that in this type of cases the condition of the fundus during the active period is unknown, but when examined some time after recovery, traces of past optic neuritis are found in some of them, though in others no visible changes remain. In none were any signs of widely spread neuritis ob-

1. Second Edition of Graefe-Saemisch Handb. d. Gesamten Augenheil., xxxii, 34.
2. Klin. Monatsbl. f. Augenheil., 1905, xliii, 2.
3. Section on Ophthalmology, American Medical Association, 1906, THE JOURNAL A. M. A., Feb. 9, 1907.
4. Trans. Am. Ophth. Soc., xi, Part 2.

served, nor any hint pointing to eclampsia, though, on the other hand, they could not be explained either by flooding or obvious kidney disease.

In connection with the ocular changes, which are not dependent on renal disease, it may not be amiss to record the observations of Lutz and Landesberg, who reported two cases of transient blindness occurring in icterus gravidarum.[5] Lutz' case was that of a woman, 37 years old, who fell in the eighth month of pregnancy. The patient was deeply jaundiced, and hemorrhages were scattered over her entire body. The urine was free from albumin. Both eyes were totally blind, though vision improved somewhat later. Death followed two days ofter the delivery of a dead fetus. In Landesberg's case, also, a woman in the tenth month of pregnancy, total blindness, which partially disappeared after four days, was present in both eyes. The ophthalmoscope showed nothing abnormal and the urine was free from albumin. Although the blindness in both of these cases was attributed to the jaundice, it should be remarked that jaundice other than that occurring in pregnancy does not produce transient blindness.

Teillas observed retinal hemorrhages which were remarkable for their suddenness and their copiousness in four women who were pregnant. The hemorrhage in all four instances disappeared after labor without leaving a trace or interfering with vision in the slightest. The heart and other organs appeared perfectly normal and the hemorrhages were thought by Teillas to be dependent on purely mechanical causes, and to be regarded as, in a sense, physiologic.

Retinal detachment in two pregnant women, who were sisters, has been reported by Schoeler. Albuminuria was absent, nor could the causal connection be established.

This comprises the literature of ocular changes which have been noted in women who were pregnant, and whose urine did not contain albumin. Though not numerous, many of the observations are most significant, serving to demonstrate the aid the ophthalmoscope may be in arriving at a diagnosis in obscure cases.

The diagnosis of toxemia once made, the question of saving the life of the mother must now be considered, as ocular symptoms occurring in the course of pregnancy only arise in the event of a pronounced autointoxication, and the alternative of inducing labor artificially must be weighed, the ocular examination being frequently made the crux on which the decision is rendered. Silex has considered this phase of the subject very exhaustively in so far as the ocular symptoms of renal complications are concerned, and has concluded that when retinitis develops in the first months in cases in which chronic nephritis had previously existed in a latent form, but had been set into activity by pregnancy, labor should be artificially induced at once, for not only is the life of the mother jeopardized by the renal disease, but the chances for a labor at full term are few, and blindness may ensue from a progression of the retinal disease. In the acute nephritis of pregnancy, premature delivery is advised, as he considers the prospect for sight during the progress of pregnancy as none too favorable, especially if the retinal vessels are diseased.

Randolph gives like advice, believing that labor should be induced in all cases which exhibit ocular symptoms in the first six months of pregnancy, while he counsels that those in whom symptoms appear in the last seven weeks should be carefully watched, unless the retinal lesions are very extensive.

When the ocular symptoms arise later in pregnancy the social conditions of the parents and the desire of the mother to have a child must often be taken into account, and as the bringing on of an abortion does not always improve vision, and as such women, like subjects of other varieties of Bright's disease, are apt to die before two years have elapsed, some of these cases may be permitted to come to full term. General rules of procedure are impossible, and each case must be considered separately and treated conservatively.

As the renal disease of pregnancy and the complications of retinitis do not always reappear in future pregnancies, future conceptions need not always be prohibited.

The prognosis for sight in cases in which the ocular changes have been induced by the renal toxemia of pregnancy, has been well established, Culbertson's figures recording blindness in 24.99 per cent., partial recovery of sight in 58.31 per cent., and recovery of sight in 16.66 per cent. of the cases. Silex's tables show blindness in 25 per cent., partial recovery of sight in 47 per cent., and recovery of sight in 29 per cent.

In conclusion, we desire to report a case of toxemia during pregnancy where the ocular symptoms, which were the only demonstrable signs of the disease, and the general symptoms disappeared promptly after the induction of labor. The urine was free from albumin at all times, and the general symptoms were few, and had the ophthalmoscope not revealed the malignancy of the toxemia it is probable that the labor would not have been interrupted, and it is not unlikely that the patient would have died of eclampsia.

*History.*—Mrs. A., aged 20, became pregnant for the first time in the second year of her married life. At ten weeks' gestation, the patient, who had always been strong, complained of an aching fulness in the back of the head. Soon after (in the fourteenth week of gestation) a slight dimness of vision was noted, especially in the right eye, and there was some soreness of the eyeballs.

*Examination.*—She was sent to one of us (Posey) who found the vision in each eye slightly reduced, the cause of this being a quite pronounced neuroretinitis in both eyes, more marked, however, on the right side. The edges of both optic nerves and the retina for some distance from the nerves were hazy. The blood vessels were full and tortuous, and there were a few small rounded fluffy lymph extravasations in the region of the disc. There were no hemorrhages. Although the patient's urine had been carefully and repeatedly examined by her physician after conception, and had been found negative, further studies were made of it and of the blood as well, but nothing abnormal could be found.

*Treatment.*—Active eliminative treatment was at once essayed, and salts, pilocarpin sweats, colon flushings, rest in bed, a milk diet, and Basham's mixture, together with a free use of water internally, that is, from eight to ten glasses daily, were tried for a week, but without relief to her general symptoms, while the ocular conditions apparently progressed. Radical measures were thought of, and after consultation, one of us (Hirst) induced labor artificially. Recovery was prompt, the general symptoms disappearing at once, the ocular changes after some weeks.

*Subsequent History.*—A year has now elapsed since the termination of pregnancy and conception has been carefully avoided since. The general condition of the patient, however, is still somewhat abnormal, her endurance being curtailed and her digestion weak. Though there have been no recurrences of the retinal extravasations, the retinal vessels appear unhealthy, being unduly full and tortuous, awaking the suspicion of a disease of their walls. The urine has been examined re-

5. Groenouw: Graefe-Saemisch, xxvii, p. 183.

peatedly, but nothing abnormal has been found. Her physician is inclined to ascribe the toxemia to a failure of the liver to perform its functions properly, the patient's father having died of hepatic cirrhosis, and there having been great tenderness over the whole liver until after the delivery of the fetus.

## THE USE OF ANTHRACITE COAL ASH AS A SURGICAL DRESSING.*

W. IRVING CLARK, JR., M.D.
WORCESTER, MASS.

I desire to call attention to a by-product which can be used where frequent dressings are necessary and where the question of expense is of importance. This is the ash of anthracite coal, used in stoves and furnaces all over the country and hence readily obtainable. The ash is neutral in reaction and, on careful analysis, shows no substance which, even if applied to an open wound, would cause irritation.

The ash collected from the furnace is placed in a flour-sifter and thoroughly sifted. It will be found to fall on a sheet of paper as a soft, brownish, floury powder. This is all the preparation necessary.

A piece of old sheet or well-washed linen is cut in rectangular shape and of any desired size. The square is placed on a table and a small pile of the ash is placed in the center. The sheeting or linen is then folded over it, as in making a poultice.

Such a pad can be made rapidly, and when examined will be found soft, compact and absorbent. It can be nicely adjusted to any part of the body with adhesive plaster straps.

After an ash pad has been applied to a discharging wound for some time it becomes moulded to the part, as the ash loses its powdery consistency owing to absorption. It has then the consistence of dough and acts as a partial splint, being more comfortable than otherwise.

The ash is very absorbent but does not act as quickly as gauze. It will, however, draw pus up into the pad instead of spreading it over the skin as is so frequently the case in a gauze dressing.

The ash, though aseptic when taken from the furnace, has no antiseptic properties. This was proved by tests at the laboratories of the Worcester City Hospital.

Pads, as above described, are intended for use in cases where large gauze dressings are usually applied, namely, suppurating wounds and sinuses. The greater the amount of pus and the more fluid its consistence, the more successful the dressing. In cases where pressure is advisable, as in varicose ulcers, they will be found excellent though sometimes a trifle bulky. The discharge of the ulcer is completely absorbed and the pressure prevents local stasis.

Ash pads have been used with success and without discomfort to the patient in discharging sinuses of the neck, chest and abdomen and also in discharging abscesses in various parts of the body.

Experiments with these pads were carried on over a period of three months at Roosevelt Hospital, New York. The only complaints by the surgeons using the pads were that they were heavier than gauze, and that in cases with thick, gummy pus the discharge failed to penetrate the close mesh of the sheet. Since these experiments the pads have been used by the Worcester Society for District Nursing with satisfaction.

* Read before the Worcester County Medical Society.

### CONCLUSIONS.

1. In cases where gauze can not be obtained or the expense is too great, ash pads form a good substitute.
2. In freely-discharging sinuses and suppurating wounds the discharge will be well taken care of.
3. When the discharge is thick and gummy, or where weight or bulk of dressing is contraindicated, they should not be used.
4. They are particularly applicable to discharging wounds of the axilla, popliteal space and palm of the hand, because they fit snugly and tend to splint the part. They are also well suited to varicose ulcers and discharging sinuses of the abdomen.

## FISTULOUS TRACTS, TUBERCULOUS SINUSES AND ABSCESS CAVITIES.

### A NEW METHOD OF DIAGNOSIS AND TREATMENT BY BISMUTH PASTE.

EMIL G. BECK, M.D.
CHICAGO.

The new method of diagnosis of the above affections, employed by me since March, 1906, consists in filling the fistula or abscess cavity with a bismuth-vaselin paste and then taking a radiograph of the region affected. Bismuth, as is well known, offers great resistance to the penetration of the *x*-rays and, therefore, is a suitable material for this class of radiographic work. The shadow obtained by its use represents the true picture of the shape and ramifications of these cavities within the tissues. In some instances the most surprising and unexpected findings are detected in this way. This method of diagnosis is superior to the methods now in vogue, such as the probe, the injection of colored fluids or peroxid of hydrogen.

These radiographs have shown why some patients have not been cured even after several operations. They demonstrated the uselessness of an operation which does not remove every part of the fistulous tract. A subsequent operation done under the guidance of the skiagraph has, as a rule, proved successful. Therefore, the skiagraph has proved indispensable in the treatment of fistulous tracts.

The first case injected for diagnostic purposes suggested the use of this method of treatment, the injection of liquefied bismuth-vaselin paste proving valuable not only for diagnostic purposes, but also for curative purposes. After one injection of the bismuth paste the psoas abscess fistula (Fig. 1) which had existed nearly two years, closed up entirely and has remained so. Similar results followed in other cases:

CASE 1.—Miss A. D., 4 years old, presented herself March, 1906, with a fistula resulting from a psoas abscess which had discharged pus for nearly two years, and required daily dressing. Bismuth injection for diagnosis was made April 23, 1906. The skiagraph (Fig. 1) demonstrates that the fistula extends from Scarpa's triangle along the psoas muscle up to the junction of the second and third lumbar vertebræ. There the bismuth fills out a space about three-quarters of an inch long and about one and one-quarter inches wide, right in front of the second and third lumbar vertebræ. A small cavity the size of a hazelnut is on the opposite side of the vertebral column.

The parents returned a few days later stating that for the first time in two years the fistula stopped discharging pus. Two months later the fistula still was closed and the child had no symptoms which would indicate retention of pus. Another skiagraph was made and we found that the bismuth had disappeared. It had probably been absorbed, because the parents

stated that none of the material had been found on the dressing. The patient is well, the fistula having remained closed.

A series of cases subsequently treated by this method proved that the cure in Case 1 was not accidental, but that equally good results could be obtained in other similar cases. We have treated 14 cases: 2 cases of spondylitis and psoas abscess, 2 and 16 years duration; 1 case each of tubercular hip-joint, 16 years duration; tubercular knee-joint, 7 years duration; tubercular pelvis, 3 years duration; tubercular ulna, 6 months duration; chronic osteomyelitis of femur, open since 1899; fistula after resection of tubercular kidney, 1 year duration; abscess of lung, 9 months duration; 3 cases of rectal fistula, 2 years and 1 year and 6 months duration; 2 cases of abdominal fistula following laparotomy, 4 months and 1 year duration.

FORMULA OF PASTE FOR DIAGNOSIS AND EARLY TREATMENT.

| ℞. | gm. | |
|---|---|---|
| Bismuth subnitrate | 30 | ʒi |
| Vaselin | 60 | ʒii |

Mix while boiling.

FORMULA OF PASTE FOR LATE TREATMENT.

| ℞. | gm. | |
|---|---|---|
| Bismutn subnitrate | 30 | ʒi |
| White wax | | |
| Soft paraffin, āā | 5 | āā, gr. 75 |
| Vaselin | 60 | ʒii |

Mix while boiling.

In some cases we have added 1 per cent. formalin. It is generally believed that paraffin is not absorbed in the tissues. This applies only to hard paraffin. The soft paraffin is absorbed. This has been proved by the experiments of Drs. Kirchner and Eckstein, of Berlin, in 1905 and 1906.

Care should be taken that no water be spilled into the paste during the process of boiling, and the glass syringes must be sterilized by the dry process and the plunger dipped in sterile oil, instead of water, before charging the syringe.

METHOD OF INJECTION.

The fistula should first be dried out, if possible, by packing into its depth a strip of plain gauze, one-half to one inch wide. This gauze is removed just before the injection of the paste. The emulsion is sterilized before using, and the syringe is charged while the emulsion is hot and liquid. A glass syringe with a nozzle similar to that of a Valentine irrigating tip should then be loaded with the bismuth paste and tightly pressed against the fistulous opening; the emulsion is forced in very slowly, until the patient begins to complain of pressure. The syringe is then removed and a small gauze sponge is quickly pressed against the opening to prevent the escape of the paste until it has hardened sufficiently. An ice-bag may be applied to hasten the hardening of the material. I inject the bismuth-vaselin paste until the discharge ceases, and then use the harder preparation containing wax and paraffin, after which it usually remains closed. The injections are painless and produce no dangerous symptoms, such as hemorrhage, sepsis, embolism, etc.

The composition of these substances is subject to further experiments. There are probably substances which will prove superior to those which we have used. It is my opinion, however, that the healing does not depend materially on the particular substance as long as it is a material which is liquid when injected and rapidly solidifies after injection. The solid substance acts as a framework for the formation of healthy granulations.

Besides, it is highly probable that the bismuth, which becomes radioactive on exposure to the *x*-rays, promotes the formation of granulations on the walls of the fistulas, with which it comes in direct contact. To increase the radioactivity I have, in some cases, added strontium salicylate and exposed the patient to the *x*-rays for one or two minutes after the injection.

Later the bismuth-vaselin is absorbed and the connective tissue remains and contracts, thereby obliterating the sinus. This principle of utilizing bridgework to promote healing of suppurative processes is also applied in Bartlett's filigree, which has the disadvantage of not being absorbable. I believe that if I placed a filigree spiral into a straight fistula, it would serve the purpose of a bismuth plug. The Moorhof wax plug and the decalcified bone-chips of Senn probably act on the same principle.

The injection of iodoform-glycerin emulsion into tuberculous joints was probably a step nearer to this bismuth paste injection treatment.

Filling the cavity with decalcified bone-chips; covering the raw surfaces by skin grafts or skin flaps; the Mosetig-Moorhof plug, are some of the methods now in vogue.

Each has its merits and many cases will yield to some of these methods. But there still remains a class of cases to which none of these methods is applicable, as, for instance, a fistula following psoas abscess. Other cases, again, continue to suppurate in spite of treatment.

The habit of irrigating these chronic fistulous tracts with watery solution is more harmful than beneficial. The fluid fills up the sinuses and keeps their walls in a macerated condition, thereby preventing the formation of healthy granulations. Injection of alcohol, however, on account of its desiccating property, is permissible, providing the fistula does not communicate with hollow organs.

The bismuth paste method is applicable to all fistulas or abscess cavities, except intracranial sinuses or biliary fistulas and those communicating with the urinary bladder.

CASE 2.—M. Y., aged 14; family history negative; was healthy until he was 7 years old, when he developed a painful swelling in his right knee. A cast was put on by his family physician for the purpose of immobilization. In a short time an abscess ruptured, and the boy was transferred to a hospital at Freiburg, Germany, and an operation was performed for tuberculosis of the knee-joint. He left the hospital seven weeks later with a sinus extending from the knee-joint into the middle of the tibia, and two smaller sinuses near the joint.

A short time later he returned to the hospital for another operation which, however, failed to close the sinuses, and a third operation was performed two months later, again with an unfavorable result. Professor Bruns of Tübingen performed a fourth operation. No improvement, however, resulted, and three fistulas persisted. Further treatment was abandoned.

Six years after commencement of the fistula, he came to me for treatment. A radiograph without bismuth injection was first taken. It shows the joint and the epiphyses of femur and tibia nearly destroyed, and a sequestrum is clearly visible in the tibia. I proposed resection of the knee-joint, which was rejected. I then cleaned out the knee-joint thoroughly, but the three fistulas persisted. Next Bier's hyperemia method was carried out for four months, but without result. At this time our experiments with bismuth injection were so promising that I decided to try it in this case.

The first bismuth paste injection was made Oct. 3, 1907. After three injections the sinuses became nearly closed, and the

fourth injection was made with difficulty. The fistulas remained healed, the boy became stronger and gained in weight, and the pain disappeared, so that he could discard his crutches, which he had used for seven years.

CASE 3.—H. A., 19 years old; clerk, with good family and personal history; was taken sick in January, 1907, with an attack of muscular rheumatism and bronchitis. Pleurisy, with effusion and empyema followed. March 19, 1907, two ribs were resected, the pus was evacuated, and drainage established. The wound closed up in two weeks, but reopened later and discharged a dark green pus of a very fetid odor.

We left out all drainage and injected the cavity daily with the bismuth-vaselin paste. The pus gradually diminished in quantity. After ten injections the wound ceased to discharge any pus and remained dry for three days. Suspecting retention of pus, I inserted a rubber tube, which passed in with some difficulty. Then I ordered the patient to close his mouth and nostrils and distend his lungs as much as possible. This brought out the material in a semi-liquid state which hardened immediately in the basin. No pus followed after all the material was forced out.

This incident indicated to me that the body temperature kept the bismuth-vaselin in a liquid state, and I therefore concluded to add wax and paraffin to it. This was done January 10, and the skiagraph shows that the cavity is nearly obliterated by the paste (Fig. 2). The fistula closed up entirely and no unpleasant symptom followed, except that during a coughing spell some of the injected material was coughed up.

CASE 4.—Miss M. G., 21 years of age, was well until 6 years of age. At the age of 6 she had a pain in her right knee, which was considered to be a growing pain. It was treated with liniments. At the age of 7 Dr. Godfries punctured the hip-joint and found thick pus. She was then operated on by Dr. A. F. Buckman for tubercular hip-joint disease. The wound continued to discharge and the dressing was so painful that often an anesthetic was required during this procedure. One-half year later Dr. Godfries removed the head of the femur. Since then thirteen other operations were performed at intervals of six months. The last operation was performed by the late Professor Senn, June, 1907. The acetabulum was curetted and all necrotic bones and granulations were removed, but the fistula continued to discharge small quantities of pus, which required dressing.

Dec. 10, 1907, she came to me for treatment. The radiograph (Fig. 3) shows that the fistula originated in the acetabulum. The paste was injected every two to three days, and a 1 per cent. formalin solution was added. After ten injections the fistula ceased discharging. The next injection was made with great difficulty and only a very limited quantity of the paste would penetrate, showing that the fistula was ready to close.

CASE 5.—E. S., aged 21; parents both healthy. At the age of 4 an abscess developed in his left knee, which ruptured spontaneously and a fistula remained. The physician in attendance must have discovered Pott's disease, since he put on a plaster corset, and later a brace. At the age of 7, two abscesses ruptured, one on the left side of his back and the other around the left hip. Operations were then performed, from time to time, fifteen in all, some of them quite extensive, with the final result that eight fistulas remained. In this condition he presented himself for treatment in April, 1906. The radiograph (Fig. 4) shows the enormous network of sinuses extending from the lumbar vertebra down to the knees. A surgical procedure was impossible on account of the poor physical condition of the patient. The boy was put on tonics and returned Sept. 12, 1907, for treatment.

We began with injections of bismuth, and according to the radiographs subsequently taken we find that two fistulas had healed and six remained discharging. One of these, which opens on the sacrum, discharged fecal material for about three weeks, but this has now ceased. The fistulas remaining originate in osteomyelitic bone, probably, with sequestra, and inasmuch as a surgical operation is now out of the question, we will continue with bismuth injections. The boy is in better physical condition than he has been for several years. What the final result will be is difficult to say.

CASE 6.—Miss E. S., 18 years old, has had the usual diseases of childhood, but no evidences of tuberculosis. In 1904 she developed an abscess in the region of her right hip. It was incised and drained, but showed no tendency to heal. Temperature varied from normal to 104; pulse, 140. Fistula resulted and discharged until May, 1906, when she returned for further treatment. The sinus was about four inches deep, passing internally over the crest of the ilium; discharge slight. No skiagraph was taken. An operation was advised and performed by Dr. Carl Beck, May 19, 1906. The sinus was opened freely and several pockets were exposed and curetted, but no necrosis of bone was discovered. Wound was dressed daily, irrigated with sterile water, and peroxid of hydrogen; sometimes iodoform emulsion was injected. She left the hospital July 17, 1906, and while she had no fever and had gained in weight, her fistula continued to discharge pus. She returned Dec. 4, 1906, with a temperature of 102; pulse, 114.

A skiagraph of the pelvis was then taken, after the fistula was injected with bismuth paste (Fig. 5). It demonstrated the network of sinuses present, and showed the uselessness of an operation which does not explore every recess of the fistulous tract. An extensive exploration of all sinuses was performed December 12, and every sinus was scraped and packed with gauze. Temperature remained normal after operation. The wounds healed very rapidly, and bismuth paste was injected for a short time into the closing wound, and the entire process healed up. Patient left the hospital Jan. 30, 1907, in first-class condition, with fistula healed up for the first time in three years. Jan. 15, 1908, she was entirely well.

CASE 7.—A. G., 18 years old, in 1907, developed a mastoiditis on the left side. He was operated on and cured. Three months later he returned with a mastoiditis on the right side. He was again operated on, and also with good results. During his stay at the hospital we accidentally discovered that he had a rectal fistula, and on inquiry we found that he had an abscess opened by his physician about three weeks before he entered the hospital. After injecting the bismuth paste a radiograph was made. Radical operation was performed Nov. 30, 1907, in the usual way, by splitting up the fistula into the rectum. During the operation I found solidified bismuth paste filling out the deepest part of the fistula. This bismuth had been in two weeks, since no injections were made two weeks previous to the operation. He made a splendid recovery.

CASE 8.—Mr. M. A., 25 years of age; family and personal history negative. In the fall of 1905, he was operated on for acute gangrenous appendicitis, which was followed by a fecal fistula. A secondary operation failed to close the fistula. Although the fistula discharged very little fecal matter, it discharged pus and gas. He was then treated for six months with silver nitrate cauterization, without any material improvement. In August, 1906, bismuth paste was injected and this one injection was sufficient to obliterate the fistula. The patient presented himself a month ago (one year after the injection) with his fistula still closed.

This case demonstrates that, even if the fistula communicates with the intestine, obliteration is possible by means of the bismuth paste injection.

CASE 9.—Mrs. H. R., aged 26; was operated on Jan. 7, 1907, by Dr. Carl Beck for tuberculous kidney. The right kidney was removed; it contained a number of abscesses. It required a large incision, and the ragged cavity which remained after removal was packed with gauze for drainage. After long and tedious treatment, such as irrigation, the patient improved in general health, but the fistula showed no tendency to healing, and the patient left the hospital May 22, nearly six months after operation, with very little hope that her fistula would ever close. About three months later, when our experiment with bismuth injection became encouraging, we sent for her, intending to try this method. The first injection showed that the fistula reached up to the diaphragm, about four and one-half inches in length. From September 3 until November 13 only five injections were made, and a decided improvement followed. Patient, however, did not wish to remain longer at the hospital, and returned once a week for an injection.

The case is not yet healed up entirely, since the treatment was carried out with irregularity; sometimes two weeks elapsed

between the injections. A second radiograph, however, proved that the fistula is reduced about one-half, and the discharge is not nearly as great as before. Patient's general health is very much improved; gained two to three pounds a week. I have advised three injections a week.

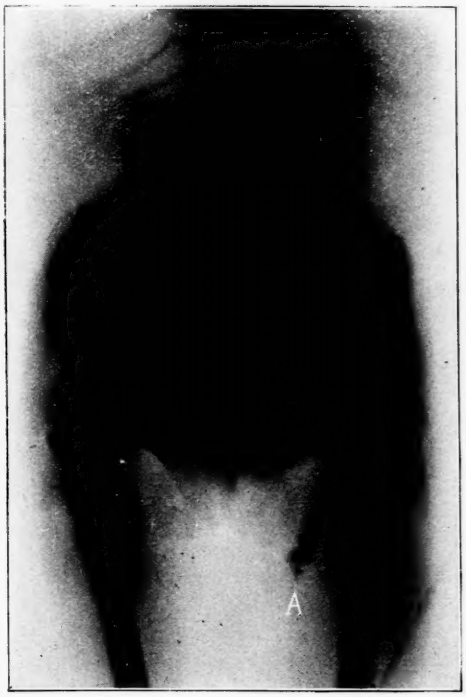



Fig. 1.—Fistula resulting from psoas abscess. Bismuth paste injected at point A.

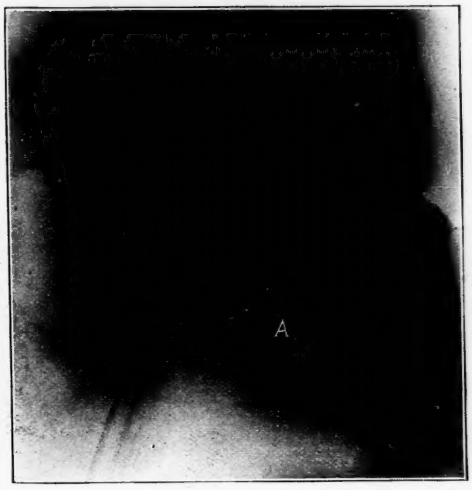



Fig. 3.—Fistula after resection of head of femur in tubercular hip. Acetabulum injected. A, point of injection of paste.

CASE 10.—Osteomyelitis of ulna. Patient, 3½ years old. Mother died of pulmonary tuberculosis two years ago; father is well. At the age of 1 year the child developed abscesses at the outer angle of both eyes, and one in front of the right ear. The child was operated on at three different times, and all wounds healed. A diagnosis of tubercular bone disease was made. At the age of 3 years, the child developed a swelling over the left forearm. This swelling was incised, pus evacuated, and a fistula has persisted ever since, requiring daily dressing.

Fig. 2.—Abscess of lung, filled with bismuth paste. A, point of injection.

Fig. 4.—Fistula from psoas abscess. A, coin to show where injected. B, depth of fistula.

December 26, an injection of bismuth paste was made, and this one injection cured the fistula.

CASE 11.—G. B., 8 years old, was born with absence of rectum, and a colostomy was performed under general anesthesia when the baby was only sixteen hours old. During the

first four years this child had two plastic operations on his rectum—the formation of an artificial rectum, and closing of a congenital recto-vesical fistula. While the result was satisfactory and the boy had control of his rectum, it was not considered safe to close up the colostomy. At the age of 7, however, it was decided to close the abdominal opening. This was done in June, 1907, but a small fistula remained for several months. Finally an injection of bismuth paste was made, after which the fistula healed and never opened again.

CONCLUSIONS.

1. A successful surgical operation on fistulous tracts depends principally on the exact knowledge of the extent and direction of the sinuses before the operation is undertaken.

2. Radiographs taken after the fistulas have been injected with bismuth paste show the extent and direction of the fistulous tract.

Fig. 5.—Fistulous network of tubercular disease of the iliac bone. A, opening of fistula.

3. Skiagraphs of all fistulous tracts should be taken before an operation is decided on.

4. Fistulous tracts, tuberculous sinuses or abscess cavities, including empyema, can be cured by injection of bismuth paste.

5. Cavities or fistulas should be as clean and as dry as possible before the injection of bismuth paste.

6. The bismuth paste, when mixed with wax or soft paraffin and injected in a liquid state, solidifies in the fistula and serves as a framework for new connective tissue. The paste is absorbed and the fistula obliterated.

7. Bismuth paste injection will not heal out sinuses where sequestra are present. Same must be removed before injection.

8. The bismuth paste injections are painless and produce no unpleasant or dangerous symptoms.

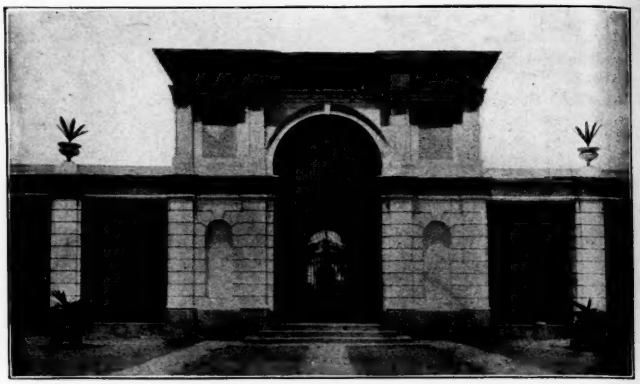


Fig. 46.—Hospital Dos De Mayo ("Second of May" Hospital), Lima.

## *Special Article*

# TRAVEL NOTES FROM SOUTH AMERICA.

THE LATE
NICHOLAS SENN, M.D.
CHICAGO.

## XII. MEDICAL PERU.

(*Concluded from page 687.*)

### SAINT ANN'S HOSPITAL.

The Hospital de Santa Ana is the oldest hospital in America, as it was founded in 1549 by Bishop Laaysa, the first bishop of Lima. It consists of an immense expanse of one-story buildings with open courts and connecting arched passageways. The central or main part of the building is in the form of a cross, consisting of two immense wards with high arched ceilings, which meet at the middle, so that from the center of the cross every patient can be seen in what now appears as four wards. The many arched naves and the row of wooden columns running along near the walls, show very plainly that the building was first used as a convent. There

* EDITOR'S NOTE.—This chapter has been delayed by the fact that the photographs were not accessible immediately after Dr. Senn's death. From Peru Dr. Senn returned to the United States by way of Panama. It is a matter of great regret that no notes can be found of any observations made by him in the vicinity of the Panama Canal—in which national undertaking we are all so deeply interested. THE JOURNAL joins with its readers in the regret that this chapter not only ends this series of articles on South America, but also is the termination of the Senn "Travel Notes," which we have been privileged to publish at intervals during a number of years, and which have so delighted our readers.

Fig. 47.—Hospital Dos De Mayo ("Second of May" Hospital), Lima; inside gallery.

are asphalt floors throughout the entire building. The capacity of the hospital is 400 beds, and the inmates are exclusively women and female children. Adjoining the hospital is a very ancient church bearing the same name. Twenty-four Sisters of Charity of St. Vincent de Paul are in charge of the hospital, and although the building is more than 350 years old, it is kept in good repair.

At present the Lima Benevolent Society, in order to close this very old institution, is building a new hospital in accordance with the latest scientific requirements, and in the form of separate wards, each one with 40 beds, and, besides, a special department for children.

Two operating rooms of recent construction are in strong contrast with the otherwise ancient interior arrangements of this venerable building. In one of these I witnessed a splenectomy by Dr. C F. Carvallo, professor of gynecology in the medical school. The patient was a dusky Peruvian woman about 40 years of age, a multipara, who for a number of years had suffered repeated attacks of pain in the splenic region. She was quite anemic. The enlarged spleen could be felt and palpated at a point of the costal arch and the symphysis pubis, with the patient in a sitting or standing position. On lying down the spleen could easily be pushed into its natural place. The operation was performed in the presence of 13 students, all of them in linen gowns. Professor Carvallo operates under strict aseptic precautions, wearing even a face mask. The abdomen was opened in the median line, the spleen with its long pedicle was easily brought forward into the wound, when the pedicle was clamped with several long-handled forceps, the parts between them tied in small sections with catgut and the spleen removed. Not a drop of blood was lost from the pedicle. The external incision was closed in the usual way by sewing first the peritoneum, then the fascia and finally the skin. Chloroform is the anesthetic in general use. Professor Carvallo is a very careful and expert operator, and from what I saw of his work, his results in this, the oldest hospital on the American continent, must certainly be good. I saw this patient forty-eight hours later and found her doing well.

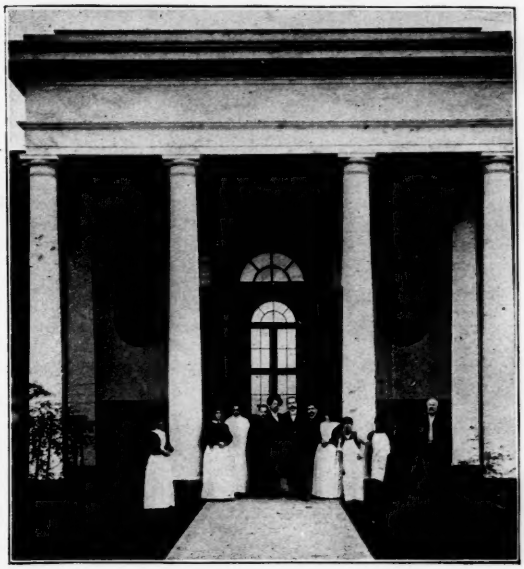


Fig. 48.—Italian Hospital, Lima.

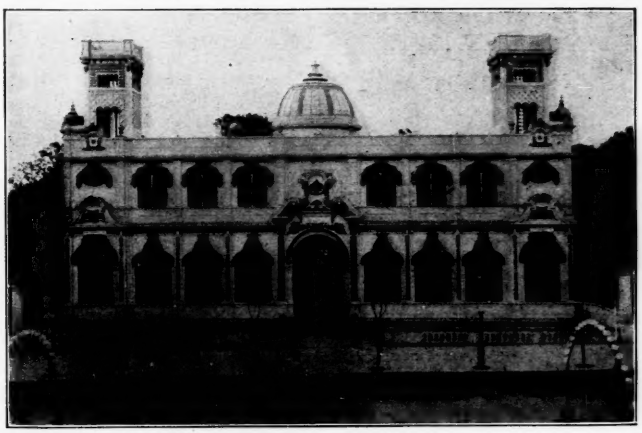


Fig. 49.—Municipal Hygienic Institute, Lima.

The faculty of the medical school forms the attending staff of this as well as of the Dos de Mayo Hospital, the combined number of patients being at least 1,000 and furnishing an enormous clinical material for the comparatively small number of students.

DOS DE MAYO HOSPITAL.

The Second of May Hospital (Fig. 46) is the largest hospital in Lima, containing 1,000 beds, although the average number of patients seldom exceeds 600. This hospital is exclusively for men. It was completed in 1875 and remains fairly well adapted for present requirements, as it has a modern operating room, and is well equipped with surgical instruments and appliances (Fig. 47). The large wards contain 54 beds each. I witnessed an operation here by Prof. G. Gastañeta on a negro for a discharging tubercular abscess in the neighborhood of the hip joint. The sinuses were laid open freely, scraped and packed with the gauze.

The operating theater is large and a glass partition separates the students from the operator. During the entire clinic the students have use only for their eyes, their ears are at rest. The tile floors, steam laundry, modern kitchen, the two excellent operating rooms, and a very good assortment of surgical instruments show that the administration and attending staff of the hospital are fully aware of the present status of hospital requirements. The hospital is in charge of twenty-four Sisters of Charity of St. Vincent de Paul.

Both of these general hospitals have resident physicians and internes and externes selected from the graduating class, who serve during the last two years of their six years' medical course.

ITALIAN HOSPITAL.

Lima has a very large Italian population, and it is constantly growing by a continuation of immigration from that country. Many of the Italians have become successful business men and hotel managers, men of wealth and influence. It is by the aid and through the influence of such men that the Italians make provisions for their countrymen less fortunate when they become affected by disease. The Italian Hospital (Ospedale Vittorio Emmanuele) (Fig. 48) was built twenty years ago. It is one of the charities of a mutual benefit society, the Societa Italiana Beneficenza e Istruzione, founded in 1862, and which has now a membership of about 1,000. Each member pays into the treasury of the society one sol (50 cents) a month, and then is entitled to free hospital treatment in case of illness. The hospital has an excellent location, and from the central court, which is a charming flower garden, the four large, one-story pavilions radiate out like the spokes of a wheel. This is the finest hospital in Lima and is well equipped. It is in charge of five Sisters of Saint Ann. The hospital has accommodations for 100 patients and has a number of private rooms for which patients pay 4 sol ($2.00) a day, and small wards in which beds cost 2 sol ($1.00) a day. The walks are paved with asphalt and all of the floors are made from the same material. Dr. E.

Campodomio is director of the hospital and in charge of the medical and ophthalmologic departments, and Dr. Ch. Milesi is the attending surgeon. Two resident house physicians, recent graduates in medicine, each receive a small salary, and are expected to serve for two years. Dr. Campodomio is an earnest, devoted and progressive physician, who devotes his whole time and services to the practice of his profession. He speaks English fluently, and is well posted in English medical literature. He has seen a number of cases of the Bolivian disease, which I have described elsewhere,[1] and believe it to be a kind of lupus, but is willing to admit that in many respects it bears no resemblance to that disease. In examining the interesting collection of pottery in the Lima Museum, I came across a piece which I am confident was intended to represent a case of Bolivian disease. The vase was undoubtedly of great antiquity, and the human face depicted on it showed to perfection the characteristic destruction of the lip and nose, and on what little remained of the lower lip, there was in the center a red spot indicating the existence of the destructive ulcer. None of the Lima physicians whom I met claimed ever to have seen cancer or appendicitis in the aborigines.

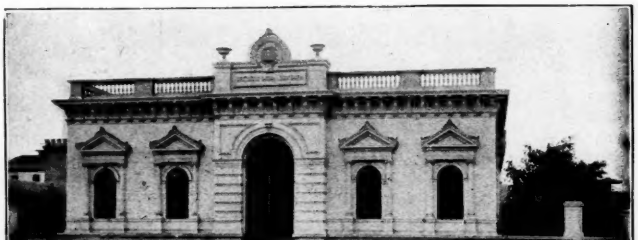


Fig. 50.—Vaccine and Serotherapeutic Institute, Lima.

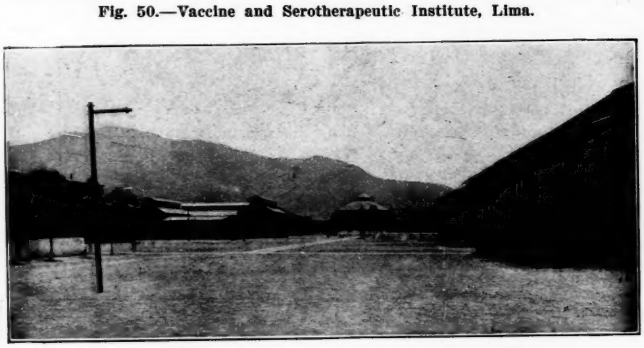


Fig. 51.—Isolation hospital for contagious diseases, Lima. General view.

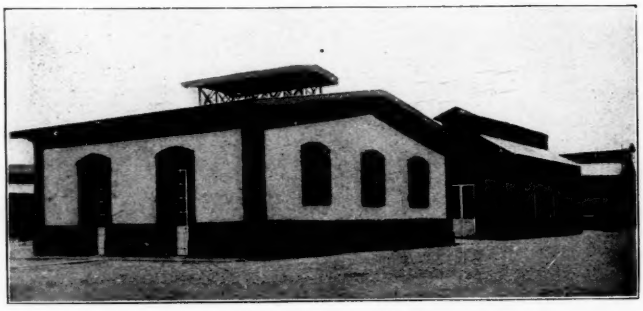


Fig. 52.—The lazaretto (pest house) and disinfecting quarters.

### DR. LARRÉ'S PRIVATE CLINIC.

Dr. Larré, a bright young French surgeon, has just completed the building of a small hospital with ten beds at a nexpense of $20,000. This little hospital is perfect in every respect, located on ample grounds outside of the city limits, and on one of the suburban tramways. He will engage trained female nurses, and after the hospital has been fully equipped, will find himself surrounded by all modern conveniences, well prepared to perform the most difficult operations, and will have the assurance that his patients will recevie the necessary careful postoperative treatment.

### CASA DE SALUD.

Two Italian physicians, Drs. Barazzoni and Vittorelli, have built a sanitarium in the beautiful suburb of Bellavista. With the aid of government support they intend to start what is so much needed here, a training school for female nurses. We wish this new enterprise every possible success.

### LIMA ACADEMY OF MEDICINE.

Lima has about 250 practicing physicians, including two ladies. A physician with an established reputation is paid $2.50 for office consultations and $5 for visits. Fees for operations are low, and an income of $1,200 is the lot of but very few. The professors are paid $65 a month, and some of them have to depend on this meager salary for a living. They must deliver each week three lectures of one hour each.

The city has only two medical societies: the Sociedad Amante de la Ciencias, a society made up of the students and professors of the medical school, which meets every two months, and in which scientific subjects are discussed, and the Academy of Medicine of Lima, with a membership of about 30. As the latter is the only real medical society in the city, it is easy to see that the mass of the profession is left without any society attractions, or is left to shift for itself. This condition is certainly deplorable, as fraternal ties tend to unity of purpose and action.

### PUBLIC HEALTH.

The Public Health Service is now thoroughly organized in Peru, and its administrative management is in the hands of the Direction of Public Health, a new branch office of the Bureau of Fomento, which was created in 1903, having at its disposal the staff and necessary elements for properly and promptly attending to the requirements of this important service in the republic. At the head of this institution is the well-known sanitarian and hygienist, Dr. Julian Arce, to whom the government has wisely entrusted its foundation, and to whose intelligence and constant application is due the rapid progress made in sanitary matters during late years. He has a strong support in Dr. Casémiro Medina, who stands next to him in the administrative work of the office, and in Dr. Francisco Graña, a most capable young physician who takes great interest in everything pertaining to the interests and work of his office. The main office of the new Bureau of Health is in the old palace, where a series of rooms has been set aside for this purpose.

The Direction of Public Health is composed of two sections: Hygiene and demography, and its dependencies are the body titular of medical men; the sanitary corps of doctors; the midwives and the vaccinators. The sanitary section, the vaccination and serotherapeutic institute; the marine lazaretto, the Lima Hospital for Contagious Diseases, and all the other lazarettos in the republic.

The titulary medical men reside in the capital of each

1. THE JOURNAL A. M. A., Jan. 11, 1908, page 118.

province, and their principal duties are to watch over sanitary conditions in their several jurisdictions; give their attention to the benevolent institutions, and to decide such medicolegal questions as may be submitted to them.

The sanitary corps of doctors has under its charge the care of the ports along the shore, and is composed also of medical men appointed in special cases whenever situations of an urgent character arise and require more constant care and attention than the permanent officials can devote to them. The maritime sanitary defense is governed by the regulations of the sanitary police formed in accordance with the Second International Sanitary Convention, held in Washington, and for its practical working has three sanitary stations created in 1904.

The first of these has been installed in the port of Payta, and gives attention to vessels coming from the north; the second, in the port of Ilo, for all vessels coming from the south, and the third in the port of Callao, the principal seaport of the republic, for those that come directly to it. These sanitary stations have each of them the Clayton apparatus for the disinfection of vessels and cargo. They also have special arrangements ashore for the examination and disinfection of baggage, and also lazarettos, for the observation and isolation of suspicious cases, or in case of epidemics. In the ports of Salaverry, Pacasmayo, Eeten, Mollendo and others, there are also apparatus and means of disinfection for the same purpose.

The Vaccination and Sero-Therapeutic Institute is intended for the preparation and diffusion of the animal vaccine fluids, and for obtaining the preventive and curative sera for the treatment and prevention of acute infectious and contagious diseases. So far, the work of this institute has been limited to the production of bovine vaccine material, and the prophylactic and curative sera have been imported regularly from Paris. During 1905, 5,900 persons were vaccinated, and of this number the result was satisfactory in 2,693; negative in 746 and unknown in 2,461 cases. During 1905 the institute imported from Paris 100 flasks of antipest serum, 100 flasks of antistreptococci serum, 60 flasks of Behring's antidiphtheritic serum, and 30 flasks of antitetanic serum.

### THE DIRECTION OF PUBLIC HEALTH.

The history of the reorganization of this important branch of the government service and many scientific articles on hygiene and sanitation are published in the official Boletin del Ministerio de Fomento, which appears about every two months, and is used as a channel through which to diffuse a more thorough knowledge of hygiene and sanitation. No. 4 of the second year's series contains a classical article on "Yellow Fever" by E. Marchoux and E. L. Simond. No cases of yellow fever have originated on the coast of Peru since the last epidemic in 1868. Compulsory vaccination in the line of coast travel has been instrumental in checking to a large extent one of the scourges of the country—smallpox.

The vigorous fight against the pest by isolation and disinfection, killing of rats and the prophylactic serum treatment have had a signal success in diminishing to a great extent the frequency of this dreadful disease, as I saw only three cases in the Isolation Hospital, and all of these patients were convalescing. Further, proper attention to water supply and sewerage, will in time make typhoid fever a less frequent disease. Those in charge of the direction of public health deserve great credit for what they have already accomplished, and the public may look with confidence to what they will undertake in the future.

### THE HYGIENIC INSTITUTE.

The institution that reflects more credit on the city of Lima than any other is the Hygienic Institute (Fig. 49). It is located opposite the Permanent Exposition building, and is a magnificent two-story edifice devoted exclusively to scientific investigations and research work. It was recently founded and organized by a specialist of repute, the Italian doctor, Ugi Biffi. G. It is divided into two sections, one of chemistry and the other of bacteriology, with a chief at the head of each, and a competent staff of assistants. Much excellent scientific work has already been done, and we may hopefully look forward to this institute for new discoveries in the untrodden paths of prophylactic and curative serotherapy.

### ISOLATION HOSPITAL FOR CONTAGIOUS DISEASES.

The group of admirably built wooden barracks (Fig. 51) on a large sandy lot, near the limits of the city, testifies to the farsightedness of the health authorities of Lima. Two Sisters of Charity and several helpers are in charge of the empty buildings, as only one building is now occupied by the three patients recovering from the bubonic plague (Fig. 52). But the city is ready for any emergency. Every building is ready to be occupied at a moment's notice, and preparedness means everything in sudden outbreaks of contagious diseases. Lima is prepared for emergencies of this kind, and the patients will be comfortably housed the moment they arrive. Everything is in readiness should yellow fever, bubonic plague, smallpox, scarlet fever, measles or any other contagion occur. A large disinfection plant is on the ground and ready for operation at a moment's notice.

PANAMA, September, 1907.

## *Clinical Notes*

## TWO INSTANCES OF SEVERE NON-FATAL SERUM REACTION.

A. P. OHLMACHER, M.D.
DETROIT.

The reports by Drs. Wiley[1] and Boone[2] of fatal serum accidents, and the discussion aroused thereby, prompt me to record my unpleasant experience, which, fortunately, was less tragic than those mentioned. Two cases of sudden reaction following the repeated subcutaneous injection of horse's serum, with very alarming symptoms, in two adults undergoing the serum treatment for rheumatism, are the ones in point. As both patients recovered, and since I was cognizant of the phenomenon of serum hypersusceptibility from my work in the serum laboratory, I observed the reactions with special interest, and studied the symptomatic events somewhat more critically than usual. In fact, the contingency of just such an accident had been considered, and I had tried to avert it by administering several "immunizing" injections of the serum during the first eight or ten days of what is shown by animal experimentation to be the sensitizing interval. In both instances the more common "accelerated reaction" of the serum disease, as defined by von Pirquet and Schick, i. e., urticaria, joint pains, and fever, failed to appear. Indeed, it seemed as if these more usual manifestations of serum reaction accumulated and took the form of one severe toxic explosion.

The first patient was the wife of a dentist, under the care of Dr. Carstens, in Harper Hospital, where she expected to be confined in about six weeks. Because of the woman's greatly crippled condition, resulting from a subacute polyarticular rheumatism, the attempt was made to relieve her by treatment with an antistreptococcic serum which had been extolled as efficacious in this affection. The serum was injected subcutaneously in doses of 10 c.c., one each for the first three days, then one at intervals of two or three days. On the fifteenth day after the treatment was commenced, and the occasion of the seventh injection, the accident occurred, there having been up to this time not the slightest evidence of serum reaction, and only a complaint by the patient that she could, within a few minutes after the

1. THE JOURNAL, Jan. 11, 1908, p. 137.
2. THE JOURNAL, Feb. 8, 1908, p. 453.

injection, taste the "carbolic acid" (trikresol) with which the serum was preserved.

The injection was performed with the usual technic, the site of that particular one being the interscapular region, with the patient sitting in bed. I had turned to hand the empty syringe to the nurse when the patient exclaimed: "Doctor, what was in that medicine?" "Do you taste the carbolic acid?" I inquired, thinking this the source of complaint. The woman's face wore a very anxious expression as she replied "No," and then with the remarks "I feel so queer! What is the matter? I can not breathe! Oh, Doctor, you have given me the wrong medicine! I am dying!" her previously pallid face became suffused, and she fell backward on the bed, breathless.

At once there appeared a most pronounced congestion of all the exposed cutaneous surfaces, and an enormous general edema by which the head, arms and legs were swollen to much increased size, completely distorting the features and causing to be overwhelmed the previously existing swellings of the affected joints. It seemed that the hands and feet were swollen to twice their size, and with the purplish congestion of the skin the woman's appearance reminded me forcibly of the bloated cadaver of a drowned person. I could feel a feeble, rapid pulse; but no effort at respiration was evident. After an interval that seemed measured by several minutes, but which, of course, was less, a gasping attempt at inspiration occurred, accompanied by a rapid recession of the edema and cyanosis, to give way to a ghastly pallor. After a few ineffectual attempts, spasmodic breathing was resumed, to be followed by moaning, inarticulate efforts at speech, opening of the eyes and gradual return of consciousness.

As soon as the woman could express herself she complained of chilliness, and speedily most severe rigors occurred. These chills, which were not allayed by artificial heat, lasted for about fifteen minutes, and while they were in progress the patient vomited several times. Following the chills the cutaneous surface took on a bright red hue and hyperpyrexia gradually developed, reaching a maximum temperature of 103 F. in about three hours. By the next morning all unpleasant symptoms had subsided, the woman expressed herself as feeling perfectly well, and for a week or two following this incident the rheumatic joints were much more comfortable.[3] Fears were entertained about the fate of the child *in utero,* but the subsequent birth of a perfectly normal infant showed that these were groundless.

In the second patient, an adult man reporting to my office for treatment, the cumulative reaction was not so severe as that just described, principally differing in that the apnea was less prolonged and consciousness not entirely lost. Further, a longer interval, perhaps two or three minutes, elapsed before the patient complained of feeling ill. But the same sudden generalized edema and cyanosis manifested themselves, with difficult breathing and a choking sensation, followed by rapid disappearance of the edema and extreme pallor, with chills and vomiting, and later by fever. Here, too, a marked relief of the rheumatic symptoms followed the serum reaction. Some ten injections of serum, first at intervals of three days, then two to four days apart, and in doses of 5 c.c. or 10 c.c., had been administered prior to the occasion in question, with no further accelerated reaction than a slight swelling and itching at the injection site, persisting for a dav or two.

3. I might parenthetically add my belief that the occasional good results which follow the injection of horse's serum in chronic rheumatism are to be ascribed to the periodic hyperemia and edema, produced in the affected joints as a part of the "accelerated serum reaction."

## SOME NEW STAINING METHODS OF WIDE APPLICABILITY.

### INCLUDING A RAPID DIFFERENTIAL STAIN FOR ELASTIC TISSUE.

F. H. VERHOEFF, A.M., M.D.

Pathologist and Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Ophthalmic Pathology, Harvard University.

BOSTON.

Of the numerous staining methods devised for demonstrating elastic tissue, the method of Weigert has given the most satisfactory results. Weigert's solution, however, stains connective tissue diffusely, and thus does not give the sharpest possible differentiation. It has the disadvantages also of staining celloidin deeply, of not permitting the use of satisfactory counter stains, and of giving especially unsatisfactory results when used on tissues fixed in Zenker's fluid. The method here to be described is free from these disadvantages, and gives an intense stain of even the finest elastic fibrils. The method gives good results after any of the following fixatives, namely, Zenker's fluid, formaldehyd, formaldehyd followed by Weigert's mordant for myelin sheaths, formaldehyd followed by Marchi's fluid and fairly satisfactory results may be obtained also with tissues decalcified in nitric acid. In the case of fixation in Zenker's fluid, tissues or sections should not be treated with iodin solution before staining. This, moreover, is unnecessary since mercurial precipitates are removed by the staining fluid.

#### RAPID DIFFERENTIAL ELASTIC TISSUE STAIN.

The staining fluid is made as follows:

Hematoxylin crystals ..... 1 gm.
Absolute alcohol ..... 20 c.c.
Dissolve in test-tube by aid of heat, filter, and add in order given:
Aqueous solution (10 per cent.) of ferric chlorid ..... 8 c.c.
Concentrated Lugol's solution (iodin, 2; potassium iodid, 4; water, 100) ..... 8 c.c.

This solution may be used repeatedly and seems to keep indefinitely.

Sections are immersed in the staining fluid for five minutes or longer, and are then differentiated in a 2 per cent. aqueous solution of ferric chlorid. The differentiation requires only a few seconds, and is completed when the connective tissue is observed to take on the color of Lugol's solution. During the process the sections should be kept in motion. In the case of celloidin sections, it is important, of course, to straighten out any edges that are folded over. To observe the stages in the differentiation, the sections may be examined in water under a low magnification. If the differentiation has been carried too far, the sections may be restained, provided that they have not been treated with alcohol.

The sections are now washed in water, followed by 95 per cent. alcohol to remove the stain of the Lugol's solution, and then are allowed to remain in water five minutes or longer. They are then counterstained in a two-tenths per cent. solution of water-soluble eosin in 80 per cent. alcohol, passed through alcohol, oil of origanum, and mounted in balsam.

By this method elastic tissue is stained black, while connective tissue, fibroglia, myoglia, neuroglia, myelin and fibrin take the eosin stain. Nuclei of normal tissues are stained faintly but distinctly; nuclei of tumors stain more intensely. Nuclear staining may be obviated by doubling the amount of Lugol's solution in the staining fluid. Degenerated elastic tissue (elacin), which stains in alum hematoxylin or in Mallory's phosphotungstic acid hematoxylin, is also stained by this method. The degenerated fibrils may be distinguished from the normal by staining less intensely and presenting more diffuse outlines.

DIRECT DIFFERENTIAL STAIN FOR ELASTIC TISSUE.

By filtering the above staining fluid through cotton and then diluting it with one volume of a seven-tenths of 1 per cent. solution of hydrochloric acid in 50 per cent. alcohol, a fairly good direct stain is obtained. It has the disadvantage, however, of staining connective tissue slightly. Sections are stained one hour or longer, washed in 95 per cent. alcohol, and counterstained as described above. Instead of eosin, van Gieson's mixture may be used as a counterstain.

DIFFERENTIAL STAINING METHOD FOR MYELIN SHEATHS.

This method which gives an intense stain, has also the advantages of rapidity and simplicity. The best results are obtained after fixation in formaldehyd four days or longer, followed by Weigert's mordant of potassium bichromate and chrome alum for four days. Results sufficiently good for most purposes, however, are obtained after fixation in Zenker's fluid, or in formaldehyd followed by Marchi's fluid. Mercurial precipitates need not be removed before staining.

Sections are placed for thirty minutes in a 3 per cent. aqueous solution of potassium permanganate. This solution may be prepared quickly if hot water is used, and if protected from the light it keeps for weeks. The sections are now washed in water and stained for thirty minutes in the staining fluid first described. They are then washed in water and differentiated in a 10 per cent. aqueous solution of ferric chlorid. The differentiation should proceed until the internal elastic membranes of blood vessels are decolorized, as determined by examining the sections in water under a low magnification. This requires one to two minutes. If it is desired to decolorize red blood corpuscles, the process may be continued longer. The sections are now washed in water, followed by 95 per cent. alcohol, for a minute or two, and allowed to remain in water for at least five minutes, preferably longer. Finally, they are counterstained in eosin and mounted in the usual manner.

RAPID METHOD OF STAINING NUCLEI.

This will be found to give results superior to those obtained with the ordinary alum hematoxylin or hematein stains, and possesses the additional advantage of being incomparably more rapid. The same staining fluid is used as for elastic tissue, except that the Lugol's solution is omitted. Successful results are obtained after any of the usual fixatives. Mercurial precipitates may be removed before staining. Sections are stained one minute or longer and then differentiated in a 2 per cent. aqueous solution of ferric chlorid. They are then washed in water and stained in eosin, or other contrast stain, in the usual manner. Old specimens, which stain feebly by ordinary methods, often take a deep stain by this method.

233 Charles Street.

## ACCIDENTAL RUPTURE OF SIGMOID FLEXURE.*

FRED FLETCHER, M.D.
COLUMBUS, OHIO.

The application of external violence to the abdominal wall not infrequently causes laceration of the intestine. Rectal injuries incident to labor, pelvic operations, the introduction of foreign bodies, penetrating and punctured wounds, are not uncommon. Cases are reported in which injuries of the rectum followed the rough handling of an enema syringe, rectal bougies and the sigmoidoscope. However, I have been unable to find a case recorded in which the intestine was lacerated from the therapeutic or criminal use of compressed air. Nor did I find in a single one of the many recent text-books a mention of compressed air under an innumerable list of etiologic factors in the production of intestinal or rectal lacerations.

Van Hook has collected 28 injuries to the rectum, complicated by wounds of the peritoneum. Death followed in 20 and recovery in 6 cases. Bryant collected 20 cases of intestinal invagination treated by rectal insufflation of hydrogen gas, in 3 of which it produced a rupture of the bowel below the invaginated portion. The experiments of Senn, made on different parts of the gastrointestinal tract when in a healthy condition and removed shortly after death, proved that lacerations did not take place under a pressure of less than eight pounds of hydrogen gas, and often that it had to be increased to twelve pounds. When the rupture took place it occurred either as a longitudinal laceration of the peritoneum on the convexed surface of the bowel or as a multiple rupture from within outward at the mesenteric attachment. The former result followed rapidly, and the later slow inflation. This is in keeping with what happened in my own case.

Many factors influence the seriousness of an intestinal laceration: the location and extent of the tear and, above all, the length of time elapsing between the injury and the observation of the surgeon. Septic peritonitis usually develops within a few hours. The treatment is that of laparotomy, a repair or the resection of the injured gut, drainage and appropriate after-treatment.

The following case offers several unusual features, and is reported because of its rarity:

Patient was a male, aged 36, German, stationary engineer; height, 6 feet; weight, 185 pounds; well nourished and robust.

*Personal History.*—Had an attack of acute rheumatic fever three months ago, and has taken ten grains of sodium salicylate, three times daily, for a period of weeks. This is mentioned because the drug has an antiseptic value. The day of the accident was the first he had worked.

*Present Trouble.*—At the close of work, 4:30 p. m., May 28, 1907, he was initiated by his fellow-workmen. Two men held him in a semi-standing posture, while a third party pressed the nozzle of a compressed air apparatus used for riveting bolts, against a thin pair of overalls, directly over the external sphincter, and turned on not less than 70 pounds of compressed air. The intense pain increased the man's attempts to free himself, so that the current of air was not used for more than a second. When the "practical jokers" released their holds, the victim fell to the ground; he was unable to move, complained bitterly of pain, and showed such obvious symptoms of trouble that a physician was called, and later the patient was sent in an ambulance to the Emergency Hospital.

*Examination.*—I saw the patient in consultation with Dr. C. E. Blanchard, two hours and a half after the accident, when he presented the following symptom-complex: semi-

* Read before the Columbus Academy of Medicine, Jan. 20, 1908.

sitting posture, pinched facies, and marked cyanosis from his inability to breathe. He was conscious, yet unable to talk because of the intense intra-abdominal pressure. The abdominal distension was something unusual. The abdomen was drum-like, and the abdominal wall so stretched that it actually felt thin. The labored respirations, from upward pressure on the diaphragm, made it possible to see a retraction of the chest wall at the costal insertions of the diaphragm. The thoracic percussion note was tympanitic as far as the third rib, above which it was hyperresonant. There was no dulness over the front or back parts of the abdomen, nor any evidence of external injury. The abdomen was so tight and tender that it was impossible, as it was impractical, to make a satisfactory examination.

The rectum felt unusually long, was patulous and empty. The patient was unable to pass flatus. There was neither blood nor a blood-tinged discharge coming from the rectum. At this point it is well to say that on entering the hospital the patient was given a soap-suds enema, the greater part of which was retained. The temperature was 96.8 per mouth; the pulse, 120. He complained of air hunger and excruciating pain with the occurrence of each peristaltic wave. He vomited 500 c.c. of an offensive, greenish-colored material; was constantly nauseated, yet unable to eructate gas. A diagnosis of rupture of the bowel was made. He was given one grain and a quarter of morphin the first two hours after the accident, and there followed an unavoidable delay (because of his religion), so that it was 9 o'clock before an operation was undertaken.

*Operation.*—With the assistance of Dr. Blanchard, I opened the abdomen through the left rectus muscle below the umbilicus. On knicking the peritoneum, the escaping compressed air and intestinal gas tore the peritoneum for a distance of three inches. The force was such as to startle those present at the operation. The intestines were found collapsed, while the stomach was distended and floated low in the abdominal cavity. It was noted that the intestines, especially the small bowel, together with the mesentery, were covered with hemorrhagic spots, varying in size from a millet seed to that of a split pea. The abdominal contents were deeply injected. The intestines were eviscerated and inspected. The pelvic cavity contained a large amount of blood, feces and the enema. Several loops of the ileum were covered with a greenish exudate.

*Site of Intestinal Laceration.*—On drawing the sigmoid flexure upward and to the right, a six-inch tear was found extending from the (constricted) junction of the rectum and sigmoid (in front of the body of the third sacral vertebra), into and along the convex border of the sigmoid. The laceration took an oblique course; it was clean cut through the mucous and muscular coats of the bowel, while the peritoneum was ribboned throughout the entire length of the tear. The position of the laceration, the first three inches being in virtually a fixed part of gut, and an unusually deep pelvis, made the operation difficult. The intestinal tear was closed with a No. 1 chromicized catgut and enforced with several Lembert sutures. The abdomen was flushed with two gallons of warm normal salt solution, and the toilet of the peritoneum was completed by introducing a large rubber tube through the median incision for drainage. The patient was returned to bed with a pulse of 120 and placed in the Fowler position.

*Postoperative Treatment.*—The patient received the customary subcutaneous stimulants and reacted well. He was not transfused. It was necessary to give two doses of morphin during the first six hours. Gastric lavage was used immediately after the operation, when the stomach was relieved of its fluid contents and gas. Lavage was again practiced for distension at the end of twelve hours. He was given fluids at this time. The kidneys were active; however, no flatus had been passed per rectum, and on the second day tympanitis became troublesome. There was every evidence of a general peritonitis; the temperature was 100.5 F., the pulse 100. The nausea and abdominal distress were not relieved by lavage and he could retain no liquids. On the morning of the third day he vomited a large quantity of fecal material and continued to vomit at irregular intervals until noon. The pulse and temperature remained unchanged.

At this point it is my duty to say that I did not think it advisable to make a colostomy at the time of suturing the intestine, not alone for the reason that the descending colon was fixed, but because it was observed that when the sigmoid was dropped into the pelvis the site of the injury was well protected by direct contact with serous membrane. A colostomy would have suspended the sigmoid and permitted nothing to protect the point of leakage. Resection of the sigmoid was not considered.

*Colostomy.*—Three days after the closure of the intestinal tear it was evident that the obstruction was complete; he had passed no gas per rectum, and we considered it dangerous to pass a rectal tube or introduce fluids into the rectum. May 31, 1907, I made a left inguinal colostomy. The muscles were split in the usual way, and the highest part of the sigmoid pulled through and fixed (Maydl's method) with the object of making a permanent anus. The sigmoid was incised, and a long, large-sized rubber tube introduced into the descending colon and securely fastened with a purse-string suture of silk. The operation consumed 20 minutes, and the patient was returned to bed with practically no shock. The tube commenced to drain after fourteen hours, and with the passing of an immense quantity of fecal material the patient showed a marked improvement. The peritonitis subsided after a few days; nourishment was administered without disturbance, and at the end of ten days the pulse and temperature reached the normal, even though the median drainage tube discharged large quantities of pus from the pelvis. The patient's convalescence seemed well established, when, three weeks after the colostomy, he developed a right-sided pleurisy, and a week later presented the physical signs of an effusion. The daily temperature fluctuated between normal and 103 F. July 6, 1907, Dr. J. D. Dunham, Jr., saw him in consultation, and the diagnosis of empyema was confirmed by the withdrawal of 500 c.c. of pus from the pleural cavity.

*Resection of Ribs.*—July 8, 1907, I removed a part of the eighth and ninth ribs on a line with the inferior angle of the scapula and drained the pleural cavity with two large-sized rubber tubes. The patient's condition at this time was bad; he was emaciated; had bed sores, and was profoundly septic. However, he commenced to improve, and under forced feeding, tonic treatment and good nursing was able to leave the hospital (on foot) Aug. 30, 1907, three months after his accident.

Six weeks later the patient walked to my office; he has gained 36 pounds since leaving the hospital. However, he had an annoying cough; expectorated large quantities of purulent material, and complained of the discharging thoracic fistula. He had fair control of the artificial anus. No tubercle bacilli were found on repeated examinations of the sputum. The blood count at this time was 4,000,000 red cells, 14,500 white cells, and the hemoglobin index was 85. He was given a creosote preparation, and the cough stopped within a week. The fistula closed ten days later. The base of the right lung was then, and is now, collapsed. At the present time he complains of no pleuritic (adhesion) pains, nor of respiratory embarrassment.

Oct. 12, 1907, Dr. Wells Teachnor made a thorough examination of the rectum and sigmoid, using the colonoscope not only in the usual manner, but through the colostomy opening directly into the sigmoid. Dr. Teachnor was convinced of an observation previously made by myself, namely, that with a rectal tube introduced through the colostomy opening into the sigmoid it was impossible to force water, under considerable pressure, into the rectum, yet with the same tube introduced into the rectum, and under ordinary pressure, a good-sized stream emptied itself through the bowel onto the abdomen. This was tried many times, with the patient in every conceivable position, without success. The fingers could be made to touch when introduced into the rectum from below and the sigmoid above, the intestine intervening. Seemingly, the first few inches of the sigmoid were adherent to the left of the sacrum. No mass could be outlined.

*Laparotomy for Ventral Hernia.*—Dec. 3, 1907, the patient consulted me for relief from a constant backache. An examination disclosed a small-sized ventral hernia at the site of the (median) drainage tube. The protrusion was not large; was reducible, yet would account for the mesenteric pull and the

backache. December 5, I opened the abdomen to the right of the old scar. The omentum was not adherent to the parietal peritoneum. The hand was introduced for an exploratory purpose into the pelvis. The commencement of the rectum and fully four inches of the sigmoid seemed fixed to the left of the sacrum. The adhesions were not disturbed. The defect in the abdominal wall was closed by dissecting two free flaps of adherent aponeurosis and peritoneum; these were overlapped transversely and fixed with mattress sutures. The patient took the anesthetic well, and had neither respiratory or abdominal postoperative disturbances. The wound healed by first intention, even despite its being occasionally soiled from the discharging anus. The convalescence was uninterrupted, except for an extensive dermatitis which followed the use of Harrington's solution while preparing the field for operation. The solution was not used for more than thirty seconds, and was removed in the usual way, with alcohol. The dermatitis appeared along the line of incision and around the colostomy opening on the third day; it was vesicular on the fourth day, and later involved the front part of the abdomen, the thorax and neck as a solid blister. The patient peeled off in a week and left the hospital 14 days after the operation.

*Resection of Colon and Sigmoid Flexure.*—The patient visited me Jan. 2, 1908, and insisted that I attempt an obliteration of the artificial anus. And it seemed logical that such a thing was possible, for if water could be forced up the gut it could be made to go down.

He was sent to the Protestant Hospital and put through a preparatory treatment for three days. Jan. 7, 1908, with the assistance of Drs. Helmick and Gallen, I cut loose from the abdominal wall that part of the intestine involved in the making of the colostomy (junction of the sigmoid with the descending colon). The pelvis was thoroughly explored, and with the hand posterior to the sigmoid I was unable to guide a rectal tube in a way that we could force water into the rectum. However, it was an easy matter to irrigate up the bowel. This was practiced on the operating table. After freeing the adhesions, I was able to suspend the lower part of the sigmoid, and with considerable difficulty passed a good-sized rectal tube into the rectum. It was an easy matter, with the tube *in situ*, to free the fixed part of the sigmoid and to dilate the seat of stricture. The opening seemed large enough to justify a tight closure of the abdomen, and for this reason I resected three inches of the descending colon and six inches of the sigmoid. The anastomosis was made with an extra large-sized Murphy button. In introducing the button I carried out the original idea of attaching two heavy silk strings to the button. These were fastened to the rectal tube and drawn into the rectum. The pelvis was drained with a small roll of iodoform gauze at the lower angle of the incision. The operation required less than an hour. The patient was scarcely shocked, reacted well, and required no postoperative stimulants. It was unnecessary to administer opiates.

Gas was passed, per rectum, at the end of 8 hours. After the first 24 hours he was given a liberal quantity of liquids, and voided 400 c.c. of urine. On the fourth day after the operation he passed a medium-sized fluid stool; on the seventh day he was given one-half ounce of castor oil, and on the following day was given soft diet. Suture tension necessary to close the abdominal defect caused a slight infection at the lower angle of the incision. Other than this the patient's convalescence was uninterrupted; he was out of bed on the fourteenth day. Daily traction was made on the strings attached to the button after the second week, and twenty-seven days after its introduction it was delivered without difficulty. The button was given preference over an end-to-end suture of the bowel, for the reason that, with the string attachment, I thought I could deliver the button, and, in so doing, dilate the stricture.

---

**Dermatologic Dont's.**—Don't be too hasty in a positive diagnosis—certainly not from inspecting any single portion of an eruption; many a cutaneous disorder will present very different appearances in different localities. Don't fail to examine every part affected, both for diagnostic and therapetic purposes.—Bulkley in *Therapeutic Gazette.*

# New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 123.*)

## BROMURAL.

Bromural $(CH_3.CH(CH_3).CHBr.CO)HN.CO.NH_2 = C_6H_{11}N_2O_2Br$, is alpha-monobrom-isovaleryl-urea obtained by the condensation of urea with brom-isovaleryl bromide.

Bromural forms small, white, almost tasteless needles which are easily soluble in hot water, ether, alcohol and alkalies, but less readily in cold water. It sublimes on heating and melts in the neighborhood of 145° C. (293°F.).

Bromural can be reprecipitated from a 10 per cent. sodium hydroxide solution with acids. The presence of bromine may be demonstrated by fusion with sodium carbonate and potassium nitrate and testing for a bromide with silver nitrate solution. On heating the alcoholic solution of Bromural with sodium ethylate for several hours on the water bath, sodium bromide will precipitate. If this is filtered off and the filtrate evaporated, a crystalline mass will remain which can be recrystallized from water. This is dimethylacrylic acid, melting at 280° C.

If 1 gram bromural is boiled for about 1 minute with 10 per cent solution of sodium hydroxide, ammonia obtained from the urea will be given off.

If the hot liquid is then cooled, acidified with nitric acid and extracted with ether, on evaporating an oily fluid will remain. 1-brom-isolvaleric acid, which has the specific odor of valeric acid.

The biuret reaction can not be obtained. On melting bromural and adding concentrated sodium hydroxide solution and copper sulphate, no color reaction will take place.

*Actions and Uses.*—Bromural is a nerve sedative which is claimed to produce sleep without markedly affecting the circulation or respiration. All action by bromural is said to cease after from three to five hours. In many cases, however, the sleep caused by the preparation continues beyond the limits of its action. It is claimed to be useful as a nerve sedative and for the purpose of inducing sleep in functional nervous diseases. Bromural does not produce the desired effects in cases of insomnia where pain, cough, angina pectoris and excitement or delirium exist.

*Dosage.*—As a nerve sedative 0.3 Gm. (5 grains) three times daily, as a soporific at bedtime 0.6 Gm. (10 grains) which dose may be repeated if needful during the night, after the action of the first dose has ceased.

Bromural is supplied as a powder and also in tablets of 0.3 Gm. (5 grains) each.

Manufactured by Knoll & Co., Ludwigshafen a. Rh., Germany. (Knoll & Co., New York. Merck & Co., New York). U. S. patent applied for. U. S. trademark No. 61,165.

## ELIXIR BUCHU, JUNIPER AND ACETATE POTASSIUM, P.-M. Co.

Each 4 Cc. (1 fluidram) is said to represent buchu .6 Gm. (10 grains), juniper berries, uva ursi, of each .3 Gm. (5 grains) and potassium acetate .2 Gm. (3 grains).

*Dosage.*—4 Cc. (1 fluidram) to 8 Cc. (2 fluidrams) with considerable water three or four times a day.

Prepared by the Pitman-Myers Co., Indianapolis. Not copyrighted or patented.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, MARCH 14, 1908.

## THE GENESIS OF GALLSTONES.

Certain recent work on this subject seems to be of sufficient importance to deserve critical comment. Nearly fifty years ago Thudicum originated the theory that gallstones were formed by the precipitation of cholesterin and certain calcium compounds as a result of the bile becoming acid. This acidity he believed was due to decomposition of the bile on long standing or to a hypersecretion of mucus. Since this was long before the discovery of bacteria, decomposition was considered purely a chemical change and hence the theory was known for years as the chemical theory.

Naunyn especially has given us much information on the subject of the formation of gallstones, and to-day his classification and explanation of their origin have come to be generally accepted. According to him inflammation plays a most important rôle and is usually the beginning of the process. This is nearly always due to an infection with either colon or typhoid bacilli producing a desquamative cholangitis. The bacteria and the epithelial cells form suitable nuclei on which the various constituents of gallstones are deposited. These constituents are chiefly cholesterin (in some instances nearly pure) and calcium salts of bile pigments; also there are usually more or less carbonate and phosphate of calcium and small amounts of bile salts, soaps, fats, etc. Now the important process and the one chiefly in dispute is the origin of the cholesterin and the calcium pigments. Only a very small amount of cholesterin occurs in normal bile and this is not increased in disease. Naunyn and his school, therefore, were led to believe that this substance was not a product of an abnormal liver secretion or an abnormal general metabolism but arose from the disintegration of the desquamating epithelial cells analogous to the manner in which it is supposed to be formed in secretions of inflamed bronchi, in pus and necrotic tissues. There can be little doubt but that some at least of the cholesterin is formed in this way.

As to the origin of the calcium pigments which occur largely as the higher oxidation products of biliverdin and bilirubin, namely bilihumin and bilifuscin, it is probable that the presence of proteid in the infected secretion causes their precipitation and not an excess of calcium. Naunyn suggests that bacteria may play a part in the oxidation of these substances.

Kramer[1] has recently made some observations which perhaps will modify somewhat Naunyn's ideas rather than fundamentally change them. Naunyn did not attribute the formation of cholesterin to the bacterial decomposition of the pure bile itself. Kramer, by inoculating bile, to which broth had been added, with colon and typhoid bacilli, and allowing the decomposition to go on for several weeks, observed the precipitation of all the constituents of gallstones, namely cholesterin, calcium salts, bile pigments, etc., and masses of bacilli. After several months, these substances became firmly packed in the bottom of the tube so that they resembled soft "gallstones." He believes, therefore, that gallstones are formed by the direct decomposition of bile by bacteria in a way exactly analogous to the formation of phosphatic urinary calculi in the urine by bacteria.

This, however, does not exclude the origin of some of the cholesterin in the degenerating epithelial cells, as it is not justifiable to assume that all of the cholesterin arises from the decomposition of bile alone.

The work of Baldwin[2] on the relation of infectious diseases to gallstones recently commented on in these columns shows that the desquamation of cells in infections generally is very considerable, and the cholesterin may be seen in the cells even before desquamation has occurred. It is possible that a part if not all of the cholesterin that Kramer observed separating out in decomposing bile may have had its origin in the epithelial cells of the bile tract. It may also be noted that Kramer was preceded in his observations by Gerard,[3] who two years ago observed in the test tube the precipitation of cholesterin from bile inoculated with colon and typhoid bacilli while sterile bile did not show this decomposition.

Lichtwitz[4] has recently attempted to explain the observations of Gerard and Kramer on a physicochemical basis. He believes that in this way the formation of all the constituents of gallstones both in the test tube and in the gall bladder may be most satisfactorily explained. Briefly, he considers that certain of the colloids and chemical constituents of bile have positive charges and that certain others have negative charges of electricity, and by the reaction of these substances under certain conditions, such as an acid medium, the various constituents of gallstones are precipitated.

## THE SANITARY RESPONSIBILITY OF PUBLIC CARRIERS.

In times like these, when corporate responsibility is becoming more of a fact and less of a form, it seems worth while to call attention to a phase of responsibility sometimes ignored. We refer to certain relations that corporate organization and operation bear to the public health. Some kinds of hygienic responsibility, to be sure, have been frankly accepted. It is generally recog-

1. Jour. Exp. Med., 1907, p. 314.
2. Jour. Biol. Chem., 1908, p. 213.
3. Compt. rend. Soc. biol., 1905, p. 348.
4. Deutsches Arch. f. klin. Med., 1907, xcii, p. 100.

nized that the welfare of both large and small groups of employés is worthy of consideration. In certain manufacturing establishments the concern of employers for the health of their employés has been manifested in a variety of effective measures. Elaborate provision is made for exercise, for bathing, for suitable recreation, for wholesome food and for other influences known to diminish susceptibility to infectious diseases and to metabolic derangements. No one can doubt that such far-sighted action reaps its own legitimate reward in the increased economic efficiency of the body of employés. But it is possible to look at the question in a still broader way. Wholly apart from the demand that the men and women that are employed in various occupations be not compelled to work under unnecessarily unwholesome or dangerous conditions, there remains the duty of corporations toward the general public.

We do not propose to touch here on the harmful adulteration of foods or the unscrupulous peddling of drugs and nostrums, on the careless handling in the preparation of bread or meat or clothing, or on the reckless mismanagement of railway and street car systems. These forms of corporate responsibility are to some degree before the public and are in a way to be dealt with by more or less effective legislation.

A somewhat different and less generally regarded aspect of responsibility appears to be involved in the assumption of control by public carriers over the food and drink of the traveling public. When a steamship or railroad company undertakes to furnish transportation over a considerable distance and for a considerable period, it should be the case that reasonable facilities are provided for maintaining the health of the passengers in transit. It does not follow that a corporation should be absolved from responsibility because in the past it has given little heed to sanitary matters.

We are impelled to these reflections by a startling instance of ignorance or neglect recounted on another page of this issue.[1] While complete and officially verified facts are not before us, it seems clear from the correspondence here printed that the crew and passengers of the steamer *Northwest,* running between Buffalo and Duluth, suffered last August from a severe and extensive outbreak of typhoid fever. The cases were of unknown origin, but were evidently contracted on shipboard. The occurrence was taken up with commendable promptitude by the Buffalo Academy of Medicine, as related in our correspondence, and it is to be hoped that a thorough official investigation will be made. We would emphasize especially, in this connection, the importance of insuring some sort of efficient control over the food, and particularly over the water supply of travelers. There is too much reason to believe that the nature of the fluid used to fill drinking water tanks on railway trains, steamships and public buildings, is generally left to the discretion of some subordinate, unwatched, and it may be uninstructed, employé. Is it the custom, for example, of the leading railway systems to prohibit the filling of water tanks at stations and in terminals where the public water supply is notoriously bad? Is any control whatever exercised over these matters, and if so, by whom and in what manner? If explicit instructions are given, some responsible official should see that they are carried out.

On a steamship proper supervision of the sanitary quality of drinking water, milk supply, food supply and health of the ship's company is of particular importance since travelers are exposed, without remission or way of escape, to whatever deleterious influences may exist. We trust the disastrous outbreak of typhoid fever on the *Northwest* will be thoroughly investigated and will at least serve the purpose of pointing out the grave sanitary responsibility assumed by public carriers and the necessity of meeting this responsibility by expert inspection and control.

1. THE JOURNAL A. M. A., this issue, page 894.

## DR. WILEY AND TAINTED NEWS.

A few days ago the newspapers of the United States came out with scare headlines announcing that Dr. Harvey W. Wiley had entered the alcohol controversy in a somewhat unconventional manner. He was credited with saying that "the man who never takes a drink is a 'mollycoddle.'" That a man in Dr. Wiley's position should have thus gratuitously insulted a large body of intelligent people seemed strange to those acquainted with the chief of the bureau of chemistry. As those familiar with his printed works know, he speaks in no uncertain tones on the evil effects of alcohol, and his alleged pronunciamento, therefore, was the more surprising.

After the reported statements had led to a furore of criticism it developed that Dr. Wiley had made no such remarks as those credited to him, nor any that could be so construed. In a signed statement given out by him, here is what he actually did say: "I said that I believe the general effect of alcohol on mankind is wholly bad; that it is bad even in small quantities; that if distilled beverages, such as whisky, brandy and rum, have any good effects, they are due to the fact that the aromatic and fragrant substances therein stimulate the digestive secretions and thus overcome, to a certain extent, the bad effect of the alcohol which they contain. I said further, that I am in theory a prohibitionist, but that there are practical difficulties in the way of prohibition and that the better plan would be to abolish the saloons, and that if people want to drink distilled beverages they should do so quietly at their homes and with their foods, and not in saloons. *I made no reference whatever in my address to the term 'mollycoddle,'* nor did I suggest or advise young men to drink liquor of any kind, but said that it was always bad."

Knowing the present temper of certain interests toward the chief of the bureau of chemistry one is

tempted to believe that the false report that was given such wide publicity was another specimen of what Samuel Hopkins Adams calls "tainted news." It is a notorious fact that certain sophisticators of food-stuffs and exploiters of nostrums would give much to see Dr. Wiley's place filled by some one less strenuous in the exposure of frauds. Doubtless this canard was a part of the campaign now being made by the scared liquor interests against the oncoming wave of prohibition sentiment. That the report, which could do so much to harm Dr. Wiley's reputation as a careful observer, was given such prominence in all the great city dailies, while his denial was accorded a most inconspicuous place in the same journals, admits of but one of two possible explanations: Either the false report fulfilled the requirements for sensationalism in "yellow" journalism, or it was sent out with the object of prejudicing public opinion against its alleged author.

## ULTRAFILTRATION.

In recent researches in experimental pathology there is perhaps no one mechanical device that has been of more importance than the various forms of fine-pored filters of unglazed porcelain or similar substances. Their power to hold back bacteria while permitting substances in solution to pass through has been of inestimable value in permitting us to secure bacteria-free substances, uninjured by sterilization with heat or other violent means, and also in providing a means of separating bacteria from their products. So, too, investigators studying diseases of unknown etiology have first of all sought to obtain some ideas as to the approximate size of the infectious agent, by determining through what sort of a filter the virus will pass. In this way, we have learned of several diseases produced by organisms that pass through fine porcelain filters, including hydrophobia, yellow fever, rinderpest, and foot and mouth disease of cattle; and the inference is that the unknown causes of these infections must be smaller, at least in certain stages of their development, than ordinary bacteria. Furthermore, the composition of many complex fluids seems to be altered in passing through these fine-pored filters, enzymes being more or less reduced in strength, and absorption of various colloidal substances often being a prominent effect. In view of the importance of these filters to the experimenter, therefore, any new device is of much interest, and may well be of great importance in helping us along in our researches.

Nothing more important has been recently produced in the way of mechanical appliances applicable to pathologic research than the method of filtration devised by Dr. H. Bechhold[1] of Ehrlich's laboratory and designated as "ultrafiltration." The principle is simply that of infiltrating an ordinary form of filter with some colloidal substance that can be hardened, such as gelatin or collodion, and forcing through under pressure the fluid that is to be filtered. By modifying the nature and the concentration of the colloid used, filters can be obtained with almost any sized pores desired, and so it is possible to modify the means to the end with great success. The results already obtained with these filters suggest immense applicability in many fields of research. For example, a filter can be so prepared that it can separate two different colloids from one another, when they can be separated only with difficulty by chemical means. It is possible to filter even so soluble a protein as hemoglobin and to obtain a clear, uncolored, watery filtrate. The different fractions of peptones and albumoses obtained in protein digestion, and which ordinarily are only separable by means of the unsatisfactory "salting out" process, can be separated from one another equally as well by merely using suitable filters. Filters can be made to separate crystalloidal substances from colloids, and thus replace the time-consuming process of dialysis by a rapid filtration method, without the usual excessive dilution of the diffusate. Obviously, pathogenic agents of different sizes can be separated from one another by this method.

Undoubtedly, this device of Bechhold's will find great application not only in purely scientific and technical investigations, but also in those immediately concerned with medical problems. One result already obtained has much therapeutic interest, as it concerns the important studies that are being made in Ehrlich's laboratory in the attempt to secure non-toxic antiseptics suitable for intravenous administration. Among the substances prepared for this purpose were some of great bactericidal power, inhibiting the growth of diphtheria bacilli in dilutions of one part in half a million of bouillon culture, and at the same time not very toxic to the animal organism. However, when it was attempted to cure infected guinea-pigs by injecting many times the amount of antiseptic necessary, according to theory, to destroy all the bacteria in them, absolutely no success was obtained. Experiments then showed that diphtheria bacilli in blood serum are by no means so readily killed as those suspended in bouillon, and the question arose as to whether or not the inefficiency of the drug in the serum and in the living animal depends on its being bound in the serum, or on the more favorable environment that serum affords the bacteria. To solve this question, the ultrafiltration method was called into use, and it showed that the antiseptic is bound by the serum and thus rendered inactive. Consequently, the experimenter learned that in devising antiseptics for intravenous use he must not only consider the antiseptic power and the freedom from toxicity, but he must also seek to find some means of rendering his antiseptic less prone to combination by the serum; at the same time the ultrafiltration method gives him a ready means of determining in his experiments how effectively he is accomplishing this last named object.

1. Ztschr. f. physikalische Chemie, 1907, lx, 257.

## THE NERVOUS AND MENTAL DISEASE MONOGRAPH SERIES.

Any one who has done any research in medical literature, or has sought to build up a working medical library, will appreciate the probable value of such a series as that of "Nervous and Mental Disease Monographs,"[1] the first issue of which has just appeared. The majority of text-books are soon out of date and out of place in one's library, and the same is true to a considerable extent with the "systems" and "hand-books" that appear from time to time. The journals, serials and special treatises are the publications that make up the really valuable part of a medical library, and to many workers the latter are practically more valuable and convenient when separate than when appearing as special articles in cyclopedic works, as many a book collector has learned by actual experience, when desiring to dispose of them. There would seem, therefore, to be a useful future for this literary venture; it will certainly be welcomed by a certain class of medical readers—the neurologists—and even a much wider circle is among the probabalities. The idea apparently is to include in the series not only monographs on special subjects of neurology, but also handy compendiums of the specialties. Such a one is the first issue, "Outlines of Psychiatry," by Dr. W. A. White, of the Government Hospital for the Insane, Washington, D. C. It is a neatly printed volume of 232 pages, giving a concise general view of mental disorders, beginning with a brief psychologic introduction, followed by chapters on the definition of insanity, its classification, a simple, but modern system being adopted, the general symptomatology, mainly psychologic, and one giving what would seem to be a useful scheme for the examination of insane patients. These are followed by chapters on the several types recognized in the classification. The descriptions are clear and fairly full, notwithstanding their brevity; elaborate illustrative case histories and references are omitted. The succeeding volumes announced to appear in the near future are: "Studies in Paranoia," by Drs. Gierlich and Friedman, and "Ibsen, the Apostle of the Psychopath," by Dr. Jelliffe, the chief editor of the series. There is ample room in our medical literature for such a series as this, and perhaps more in the specialties of neurology and psychiatry than in some others.

## THE POSSIBILITY OF BRAIN SURGERY WITHOUT ANESTHESIA.

It has long been recognized that the brain substance is, in great part at least, insensitive to pain, but not that this lack of sensibility is shared by the dura. In fact, this envelope of the brain has been commonly credited with a special sensitiveness to irritation and with being the chief active factor in the local pain production of cerebral disease. The statement by Thomas and Cushing in this issue of THE JOURNAL[1] that the whole operation of incision and reversion of this membrane and the cutting down to and shelling out of a subcortical cyst could be carried out without any apparent inconvenience to the conscious, unanesthetized patient is a rather striking one that may be of decided value in future cases of brain surgery. The fact that momentary discomfort was produced by experimental tension of the dura is significant, however, and may, as Cushing says, lead us to modify our ideas as to what causes intracranial pain, as we have already had to modify those regarding the cause of visceral pain in the abdominal cavity. The fact that he has had a similar experience in another second-stage extirpation, without anesthesia, of a cerebral tumor in a child, indicates, so far as one other case can, that this insensibility to pain is the rule and is not due to special conditions existing in a particular case. Operations on the brain are always attended with more or less risk, and the added complication of the effects of powerful anesthetic drugs does not make them less perilous. Surgery of the brain is working near the supreme centers of life and, with all our recently-gained knowledge of the cerebral functions, we are yet in the dark as to many of its important mechanisms and their variations in individual cases. The cortex of the hemispheres is the controlling center of the organism and its extensive manipulation may produce unexpected effects, such as the stoppage of respiration that sometimes embarrasses operations in this region. The anesthetic, however, may be a serious disturbing factor — anesthesia is itself a functional lesion and not always a trivial one. Hence the desirability of avoiding its employment when possible. If Dr. Cushing's experience is found to be the rule, and this appears probable, it would seem that a decided advance has been made in brain surgery. Second-stage operations without anesthesia, unless they are found to possess disadvantages not now apparent, would seem decidedly preferable to the single operation with its risks of cyanosis, respiratory paralysis, etc., which may have been due to the anesthetic. The omission to use faradization of the exposed post-central convolution in this conscious patient was perhaps regrettable, as it could hardly have done any harm and some facts of interest might have been observed. In future cases such tests, with the patient's full consent, will certainly be advisable and may develop, as Dr. Thomas remarks, some most interesting data.

## ALABAMA BOARD OF HEALTH TO EDUCATE THE PEOPLE.

The evident tendency in the direction of public education along hygienic and sanitary lines has received another striking illustration in the case of the Alabama State Board of Health, which, during January, held a series of conferences on public health and sanitary questions in the larger cities throughout the state. The conferences were open to the public as well as to physicians, clergymen, municipal officers and teachers. Dr. W. H. Sanders, the state health officer, in the circular announcing the series of meetings, says: "Face to face meetings of all persons officially concerned in protecting the public health and a full interchange of views will unquestionably promote harmony and cooperation among such officials, of which conservative action the people will be

1. Journal of Nervous and Mental Disease Publishing Company, 64 West Fifty-sixth Street, New York.
1. Page 847.

the grateful beneficiaries. . . . Meetings of the kind contemplated have not hitherto been held in this state. The opportunities that lie before such gatherings for accomplishing good are practically boundless. No long addresses will be delivered, but after a few five-minute talks from physicians in explanation of our public-health system the floor will be open to any persons who may wish to be heard." The educational value of such meetings held under the auspices of the state board of health, at which the people can present any supposed complaints or criticisms and can learn the facts on hygienic matters from an authoritative source, must be apparent. Again the fact is emphasized that only through education and enlightenment can progress come.

### BACTERIA OR ALGÆ.

It is a matter of at least academic interest to physicians to learn that Professor Dunbar,[1] as the result of an elaborate study continued over a considerable period of time, has come to the conclusion that bacteria are simply a form in the life stages of the algæ instead of being a special separate type of lone vegetable organisms. He took a pure culture of a single-celled alga, one of the *Palmellasia,* and by modifying the culture medium by the addition of various substances, acids, alkalies, or traces of copper salts, he observed other organisms, chiefly bacteria, but occasionally moulds or yeasts, and even spirochetes, appear in the culture. The appearance of these last-named organisms in such conditions would seem to throw light on their true position in the organic world, for they have not usually been classed among the members of the vegetable kingdom, though their position among the protozoa has been questioned. That is, of course, should there be no error in observation or method in Dunbar's experiments, and *Nature,* in its comments, seems to credit them with special care and accuracy. The assumption of a possible explanation of the appearances by Bastian's heterogenesis will hardly be generally accepted. We know so little of the natural history of these low organisms that by themselves show so few tangible characters other than their chemical and pathogenic properties, that Dunbar's findings seem rather striking and possibly even epoch-making in their way. They will undoubtedly be thoroughly tested by bacteriologists, and if confirmed, may even develop some practical importance. There may be more pathogenic possibilities in the "green mantle of the standing pool" than we are inclined at present to admit.

### A SANE OPINION OF VIVISECTION.

It is refreshing to read the sensible remarks by Mrs. Cadwalader Jones, president of the woman's auxiliary of the S. P. C. A. at a recent meeting in New York City, and to see that, although she regrets the commotion it has caused, she has the moral courage to face the opposition she has aroused. Humane societies will not find that emotional exaggerations and misrepresentations will be profitable to their really meritorious objects in the long run; no good cause can afford to be supported by reckless misstatements. It would be well if all philosophic organizations were led by like sensible counsellors. The great surgeon, Nicholas Senn, who has just passed away, and to whom we owe no small share of the knowledge that has made some of the most brilliant achievements of modern surgery possible, said many years ago that no one is fit to attempt abdominal surgery on man who had not prepared himself by operations on the lower animals; and it is still safe to say that no new operation should ever be tried without prior assurance of its usefulness and practicability from animal experimentation. In fact, the question resolves itself into this: Are we to learn to help our fellowman by experiments on him or on less valuable lives? The charge that vivisection for the benefit of our race "annihilates the sense of mercy" hardly calls for refutation. We need not go so far as to admit with Mr. Cable's Dr. Sevier that the true philanthropist must be cold-hearted, but he can do no good by self indulgence in useless emotionalism. Such sentimentalism that can not bear to look on what seems like pain can do nothing to alleviate it and is all the while the cause of far more human and animal suffering than all the animal experimentation for legitimate physiologic or surgical purposes that ever has or will be done. The physiologist and surgeon are not necessarily hard hearted, much less delighting in cruelty, and the wholesale charges against their humanity are positively immoral.

1. "Die Entstehung von Bakterien, Hefen und Schimmelpilzen aus Algenzellen," published by R. Oldenbourg, Munich and Berlin: Nature, Feb. 13, 1908.

## Medical News

### GEORGIA.

**Atlanta's Board of Health.**—The Board of Health of Atlanta has organized for the year with the following medical members: Dr. Bernard Wolff, president and Drs. William B. Armstrong, William L. Gilbert, secretary, and Cyrus W. Strickler.

**State Board Appointments.**—The governor has announced the appointment of Drs. Francis M. Ridley, La Grange, and Dr. Isham H. Goss, Athens, as members of the Allopathic Board of Medical Examiners, Dr. Ridley succeeding himself and Dr. Goss succeeding Dr. William D. Travis, Covington.

**The Grady Hospital Trouble.**—The contest between the Atlanta College of Physicians and Surgeons and the Atlanta School of Medicine for equal representation on the medical staff of the Grady Hospital has been settled by the city council by the adoption of a rule permitting bedside instruction. Both schools are said to be satisfied, the Atlanta School of Medicine obtaining a parity of professors on the hospital staff and the Atlanta College of Physicians and Surgeons securing the privilege of allowing its students bedside instruction in the wards of the hospital.

**Medical Society Elections.**—At the annual meeting of the Georgia Medical Society, held in Savannah recently, Dr. Thomas J. Charlton was elected president; Dr. Jabez Jones, vice-president; Dr. John K. Train, secretary; Dr. William W. Owens, treasurer; and Dr. John A. Crowther, librarian, all of Savannah.——The Fourth District Medical Society was organized at Columbus March 5, with the following officers: Dr. Charles L. Williams, Columbus, president; Dr. M. M. Hallum, Carrollton, vice-president, and Dr. Charles A. Dexter, Columbus, secretary-treasurer. The meetings of the society will be held semi-annually.

### ILLINOIS.

**Millikin Entertained in Bloomington.**—Dr. Daniel Millikin, Hamilton, delivered an address March 5, before the McLean County Medical Society, Bloomington, on "The Historical Value of the Work of the Physician." Dr. Millikin, while in the city was the guest of Dr. and Mrs. John L. Yolton, who

gave a dinner in his honor before the meeting of the society, at which twenty-four guests were present.

**Communicable Diseases.**—Smallpox is reported to be very prevalent in Genoa.——Smallpox in mild type is said to be so prevalent in Lacon that the schools and churches have been closed and public gatherings have been forbidden.——Several cases of supposed smallpox have been reported at Flora.——An outbreak of scarlet fever is reported at Iroquois, for the second time in three weeks.——The public schools, halls and churches of Henry have been closed by the board of health on account of the prevalence of scarlet fever.——An epidemic of scarlet fever at Genoa has made it necessary to close the schools and churches.

### Chicago.

**Physicians' Club.**—The Physicians' Club of Chicago and the Chicago Medical Society, at their joint dinner March 13, discussed the "True Situation in Regard to the Administration of State Institutions."

**Interne Examination.**—The reorganized staff of St. Joseph's Hospital announces that a competitive examination for internships in that institution will be held March 20, at 8 p. m., at the hospital, 360 Garfield Avenue, under the supervision of the staff.

**Deaths of the Week.**—During the week ended March 7, 669 deaths were reported, equivalent to an annual death rate of 16.10 per 1,000. The deaths numbered eight less than during the previous week and 19 more than for the corresponding week of 1907. Chief among death causes were: Pneumonia, 100; consumption, 88; heart diseases, 49; nephritis, 48; violence (including suicide), 46; influenza, 20; diphtheria, 16; typhoid fever, 15; scarlet fever, 11; whooping cough, 5, and measles, 1.

**Communicable Diseases.**—There were reported to the health department during the week ended March 7, 491 cases of contagious diseases, or 18 fewer than were reported during the previous week. Of these 105 were of diphtheria, an increase of 4; 110 cases of scarlet fever, an increase of 13; 156 cases of measles, a decrease of 16; 24 of typhoid fever, a decrease of 17; 14 of whooping cough, a decrease of 9, and 52 of chickenpox, a decrease of 14. Three new cases of smallpox were discovered and sent to the Isolation Hospital. None of the three patients had been vaccinated.

**The Pasteur Institute.**—From the time of the inauguration of the Chicago Pasteur Institute, July 2, 1890, up to Dec. 1, 1907, 3,130 patients received the anti-hydrophobic treatment. Of these 2,779 persons had been bitten by dogs, 102 by cats, 109 by horses, 28 by skunks, 6 by wolves, 36 by cows, 12 by calves, 2 by burros, 4 by coyotes, one by a rat, 4 by mules, 6 by pigs, 2 by sheep, and 38 were infected by hydrophobic human beings. Of the individuals treated 1,685 were persons bitten by animals ascertained to be rabid by microscopic examination of the brain or inoculation test or by the death of persons or animals bitten by the same animal; 1,109 had been bitten by animals recognized to be rabid by symptoms shown in life, and 336 had been bitten by animals strongly suspected to be rabid. Seven deaths have been reported, equivalent to a mortality of 0.22 per cent. Of the 7 individuals who abandoned the treatment, 2 were subsequently taken with hydrophobia and died.

## KENTUCKY.

**Health Officers Ask Appropriation.**—The health officers of the various cities in Kentucky, at a meeting held in Frankfort February 18, recommended an increase in the appropriation made by the state for the maintenance of the State Board of Health from $5,000 to $25,000.

**The Jefferson County Society.**—The Jefferson County Medical Society, at its meeting March 9, held a symposium on "Abortion and Miscarriage." At the business meeting a vote was taken on the proposition to assess each member $1 annually for the support of the Jefferson County Medical Library.——A field day has been set aside by the society, when the various committees appointed by the president will work for new members. The society now numbers 260 members, and an effort will be made to make it 400 on this field day.——A milk dinner is projected by the milk commission of the society, the distributor of certified milk and dairymen interested, at which milk in some form will be served with each course. Drs. Henry L. Coit, Newark, N. J., president of the American Association of Medical Milk Commissions, and founder of the certified milk idea, and Dr. Otto P. Geier, Cincinnati, will be the guests of honor on the occasion.

## MAINE.

**Medical Mayors.**—In 3 out of 11 cities in which elections recently took place, physicians were elected mayors. In Ellsworth, Dr. Frank F. Simonton; in Saco, Dr. Harry A. Weymouth (re-elected), and in Waterloo, Dr. Luther G. Bunker (re-elected).

**Bequests.**—By the will of Hiram P. Oliver, Bangor, the Eastern Maine General Hospital is bequeathed 225 shares of the capital stock of Morse & Co., 48 shares of the Orono Pulp and Paper Company, 43 shares of the Union Iron Works and 10 shares of the Noyes & Nutter Manufacturing Company. After the payment of certain bequests two-fifths of the residue of the estate is devised to the Eastern Maine General Hospital.

## MARYLAND.

### Baltimore.

**Trimble Lectureship.**—A plan has been formed to found a lectureship in the Medical and Chirurgical Faculty of Maryland in honor of the late Dr. Isaac R. Trimble, and subscriptions for this purpose are requested. Drs. L. McLane Tiffany, Charles O'Donavan, John Ruhräh, Hiram Woods, Frank Martin and William S. Thayer, and leading citizens are in charge of the movement.

**The Eudowood Hospital.**—The work on the addition to the Eudowood Hospital for the accommodation of advanced cases of tuberculosis will soon be started. Already $17,000 has been raised by public subscription, and the directors will ask the legislature for $15,000 additional. This provides the $30,000 needed for maintenance, and will enable the directors to secure the $25,000 for the construction offered by Mr. Victor Bloede.

**Cocain Sellers.**—On February 28 the police arrested four negroes and one white boy on the charge of peddling cocain in the northwestern section of Baltimore.——Edward Blanco, colored, was convicted in the police court February 20, charged with selling cocain and is said to have been sentenced to pay a fine of $50.——Rebecca Harris was fined $50 and costs for the first offense, $10 and costs for the second offense, and committed to jail on the third offense, charged with furnishing and peddling cocain without a physician's prescription.

**Eddyist Bill.**—United States Senator Pinckney Whyte appeared before the Maryland senate committee on sanitation in behalf of the Eddyists, and urged that it would be unconstitutional to forbid them by law to charge for their services, without previously having passed the State Board of Medical Examination. The bill has already passed the house, and it is believed that it will pass the senate. Senator Whyte claimed that the bill jeopardized religious liberty, and he proposed that this amendment be incorporated in the bill: "Nothing in this act shall be construed to prohibit the practice of the religious tenets or general belief of any church whatsoever, not prescribing medicine or administering drugs."

**Personal.**—Dr. William D. Booker, who has been ill with pneumonia, and Dr. William F. Lockwood, who has been ill with diphtheria, are both improving.——Dr. T. Kubo, of the Imperial University, Tokyo, Japan, who has been in Baltimore for a year, pursuing postgraduate gynecologic work under the direction of Dr. Kelly, left March 3 for London, where he will continue his studies.——Dr. Frank D. Gavin, superintendent of the Church Home and Infirmary, has resigned after thirty-four years' service.——Dr. William K. Brooks, head of the biologic department of the Johns Hopkins Hospital, who is ill in the hospital, is reported to be doing well.——Dr. Henry Barton Jacobs leaves for Europe March 25.——Dr. John Broaddus Watson has been elected professor of experimental psychology in the Johns Hopkins University to succeed Prof. George M. Stratton, who has been recalled to the University of Chicago.

## MASSACHUSETTS.

**Cocain Sellers.**—On February 24 Joseph McGovern, Boston, is said to have been fined $50 in the Municipal Court for selling two bottles of catarrh cure which contained cocain. On failure to pay his fine he was committed to jail.——On the arrest of Ernest Kelly and Frank Mullen, both of Lynn, February 29, charged with selling cocain, twenty bottles of catarrh cure, containing a large percentage of the drug, were found on the accused.

**Bequests to Hospital.**—By the will of the late Charles H. Dalton $15,000 is bequeathed to the Massachusetts General Hospital, Boston, of which Mr. Dalton was formerly president.

**Personal.**—Dr. Charles B. Porter, Boston, is visiting in Pasadena.——Dr. and Mrs. John F. Welch, Quincy, are taking a trip to Florida.——Dr. John D. Churchill has been elected a director of the Jordan Hospital, Plymouth.——Dr. Eugene A. Darling, Cambridge, has been appointed assistant professor of hygiene at Harvard University.

## MISSOURI.

### St. Louis.

**Section Election.**—On February 18 the section on urology of the St. Louis Medical Society of Missouri elected the following officers: Chairman, Dr. Bransford Lewis; vice-president, Dr. Eugene A. Scharff; secretary-treasurer, Dr. Hartwell N. Lyon, and editor, O. Le Grand Suggett.

**Personal.**—Dr. and Mrs. Horace N. Spencer are expected to return from Central America next week.——Dr. Frank L. Henderson has gone to Europe.——Dr. Henry L. M. Wolfner is spending his vacation in Central America.——Dr. Henry A. Geitz has returned from Florida.——Dr. Rutherford B. H. Gradwohl was thrown from his carriage March 7, in a runaway accident, and painfully injured.

**Tuberculosis.**—The St. Louis Society for the Relief and Prevention of Tuberculosis has had a bill introduced in the Municipal Assembly providing for the appointment of a commission to investigate and recommend means for the control and elimination of tuberculosis. The bill has already passed the house of delegates, and it is believed the council is favorably disposed toward it. The commission will be composed of nine members, to be appointed by the mayor, who will work without pay. The only expense will be clerical and incidental, and for that purpose an appropriation of $2,500 is asked.—— The society has arranged with the San Carlos Opera Company to give three performances in their benefit, March 13 and 14.

## NEW JERSEY.

**Bequests.**—By the will of the late Charles E. Wood, Washington, D. C., provision is made for the establishment of a sanatorium at Atlantic City, to cost about $300,000.

**Personal.**—Dr. Mortimer Lampson, Jersey City, has been appointed warden of the Jersey City Hospital.——Dr. Daniel M. Stout, Berlin, is reported to be seriously ill with heart disease.——Dr. Henry B. Rue has resigned as member of the Hoboken board of health.

**Physicians Organize.**—At a meeting of the physicians of Millville, February 14, the Millville Medical Association was organized, with the following officers: President, Dr. John W. Wade; vice-president, Dr. Cornelius S. Franckle; secretary, Dr. Ralph R. Charlesworth, and treasurer, Dr. F. Vernon Ware.

**Additions to Hospital.**—Several additions have been made to the Cooper Hospital, Camden. In addition to wards, the new portion contains a diet kitchen, an *x*-ray room, a pathologic laboratory and two operating rooms complete with sterilizing, anesthetizing and recovery rooms, with surgeons' dressing rooms and a special room for nurses.

**Internes' Examination.**—An examination to fill two vacancies on the resident staff of Christ Hospital, Jersey City, will be held April 4, at 1 p. m., at the hospital, 176 Palisade Avenue. The term of service is eighteen months and internes are furnished board and rooms. Intending candidates should make application to the secretary, Dr. H. J. Bogardus, secretary of the medical board, 176 Palisade Avenue, Jersey City.

**Vital Statistics for February.**—During the month of February there were reported to the bureau of vital statistics 3,528 deaths, an increase of 147 over the previous month. Pneumonia caused 516 deaths, an increase of 105 over the previous month, and 72 over the corresponding period of 1907. Pulmonary tuberculosis caused 91 deaths more than the previous month, and other diseases of the respiratory system caused 275 deaths, 90 more than the monthly average for the year. Chief among death causes were: Pneumonia, 516; diseases of nervous system, 434; tuberculosis, 422; diseases of the circulatory system, 420; nephritis, 220; diseases of the digestive system, 174; cancer, 126; diphtheria, 67; infantile diarrhea, 52; scarlet fever, 50; typhoid fever, 39; whooping cough and cerebrospinal meningitis, each 24; suicide, 22, and measles, 11.

## NEW YORK.

**Another State Institution.**—A bill has been introduced into the legislature appropriating $188,000 for the purchase of a site for the new Eastern New York Asylum for Epileptics.

**A Gift for Rosary Hill Home.**—A patron of this institution for incurable cancer patients at Hawthorne has given sufficient money to construct a sun parlor for the women. The large entertainment hall, given by the same benefactor, has just been completed.

**For Crippled Children.**—A proposition is before the legislature for the establishment of a home for crippled children at Rochester, using property formerly occupied as a correctional asylum. As the state has a home for crippled children at Haverstraw, it is suggested that the capacity of this institution be increased, as it has already more applicants than it can accommodate.

**Report on Sewage Plants.**—The State Department of Health has completed its investigation of the sewage disposal plants in the state. More than 50 plants were examined and fully described as regards construction, operation and management. The department encouraged the construction of these plants by refusing to grant permits for the discharge of raw sewage into the waters of the state. There are already about fifty plants in the state, the oldest being at Brewster, established in 1893. The department proposes to keep these plants under observation, and by systematic analyses of the raw sewage and effluent, the value of the plants in connection with the variation in construction, and the character of the sewage may serve as a guide to municipalities contemplating the construction of plants.

### New York City.

**School for Deaf Mutes.**—A day school for deaf mutes, under control of the city, will be opened about April 1. There will be accommodations for 250 pupils. There are classes for crippled children and fifty classes for mentally defective children, but as yet nothing has been done for the blind.

**Hospital Report.**—The annual report of the German Hospital and Dispensary shows that 4,852 patients were treated at the institution in 1907, and 581 were visited at their home by members of the hospital staff. During the year the hospital became the absolute owner of the building and grounds. The expense of the hospital for the year was $216,724.

**Contagious Diseases.**—There were reported for the week ended February 29, 451 cases of tuberculosis, with 204 deaths; 1,554 cases of measles, with 39 deaths; 924 cases of scarlet fever, with 39 deaths; 373 cases of diphtheria and croup, with 44 deaths; 45 cases of typhoid fever, with 9 deaths; 20 cases of whooping cough, with 1 death; 16 cases of cerebrospinal meningitis, with 8 deaths, 181 cases of varicella, making a total of 3,563 cases, with 344 deaths.

## PENNSYLVANIA.

**Bequests.**—By the will of the late William B. Scott the Bryn Mawr Hospital and St. Christopher's Hospital, Philadelphia, will each receive $25,000.

**Quarantine Raised.**—The quarantine placed on the Keystone State Normal School at Kutztown on account of the presence of scarlet fever, has been raised.

**Diphtheria Closes Schools.**—Owing to the prevalence of diphtheria in Johnstown the Conemaugh health board has ordered that all schools, churches, theaters and other public places be closed until further notice.

**Mercer Hospital Changes.**—After a meeting between the board of trustees of Mercer State Cottage Hospital and Dr. J. Clayton Weidman, superintendent and surgeon-in-chief of the institution for 13 years, the latter was succeeded on March 3 by Dr. Paul T. Hope of Mercer as surgeon-in-charge, and Miss Helen Hunt was elected superintendent.

**Health Appropriation Decreased.**—At a meeting of the Chester council March 2 the annual appropriation for the bureau of health of $4,050 was decreased to $2,250. This deduction of $1,500 was made in order to dispense with a city bacteriologist. The physicians of Chester, however, are very anxious to have the city bacteriologist retained.

### Philadelphia.

**Benefits.**—The net proceeds of the twenty-eighth annual charity ball amounted to $7,200. The managers have given to each of the following charities the sum of $1,800: The maternity department of the University of Pennsylvania, gynecologic ward of Jefferson Hospital, Rush Hospital for Consumption and Allied Diseases and the Children's Hospital.

**Hospital Reports.**—The report of the Presbyterian Hospital for February shows that 192 new patients were admitted; total number treated, 401; 173 discharged, and 1,669 treated in the dispensary.——The Howard Hospital during February treated 113 accident cases; put up 3,613 prescriptions; treated 611 new dispensary patients, and admitted 60 patients to the hospital.——The Charity Hospital shows in its February report treatment of 315 medical cases, 231 surgical cases, 40 eye cases and 66 cases of ear and throat.

**Personal.**—Dr. J. Madison Taylor acted as toastmaster at the annual banquet of the Princeton Club, March 5.——Dr. H. W. Wiley, Washington, D. C., addressed the Pennsylvania, New Jersey and Delaware Wholesale Grocers' Association at

their annual banquet, held in this city March 5, on "Pure Food Laws and Their Proper Enforcement."——Dr. A. Maverick, recently an interne in St. Mary's Hospital, has sailed for Europe.——Drs. Charles W. Burr and Reginald C. Allen are conducting psychopathic clinics at the Orthopedic Hospital and Infirmary for Nervous Diseases every Thursday afternoon.

**Health Report.**—The total number of deaths reported for the week ended March 5 aggregated 571. This is an increase of 9 over the number for the previous week and a decrease of 84 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 9; measles, 7; scarlet fever, 5; pertussis, 5; diphtheria, 17; tuberculosis, 73; cancer, 23; diabetes, 24; apoplexy, 17; heart disease, 86; acute respiratory diseases, 109; enteritis, 19; hepatic cirrhosis, 6; appendicitis, 7; Bright's disease, 41; congenital debility, 13; suicide, 3; accidents, 9, and marasmus, 7. There were 244 cases of contagious disease reported, with 30 deaths, as compared with 244 cases and 45 deaths reported in the preceding seven days.

## SOUTH DAKOTA.

**New Health Journal.**—The executive staff of the Chamberlain Sanitarium, Pukwana, has undertaken the publication of a new monthly magazine, to be called the *South Dakota Health Journal.*

**Personal.**—Dr. Arthur H. Tufts has resigned as health officer of Sioux Falls.——Dr. A. F. Toohey, Beresford, has returned after a trip abroad.——Dr. George H. Cornell, Sioux Falls, who recently went to California for his health, writes that he has been much benefited by the change.

**State Board Election.**—The State Board of Medical Examiners at its annual session elected Dr. Alonzo A. Cotton, Vermillion, president, and Dr. Hiram E. McNutt, Aberdeen, secretary. Drs. Harry S. Graves, Hurley; Leslie G. Hill, Watertown; Frank S. Howe, Deadwood; Frederick W. Freyburg, Mitchell, and Joseph M. Walsh, Fort Pierre, make up the remainder of the board.

**Society Meeting.**—The Aberdeen District Medical Association, at its annual meeting in Aberdeen, elected the following officers: Dr. Henry J. Rock, Aberdeen, president; Dr. J. Gemmill Chichester, Redfield, vice-president; Dr. Merlin C. Johnston, Aberdeen, secretary; Dr. William E. Clark, Frederick, treasurer; Dr. E. Jay Clemons, Aberdeen, censor; Dr. D. Elmer Arnold, Aberdeen, delegate to the state medical association, and Dr. D. J. Carson, Faulkton, alternate.

**Communicable Diseases.**—The schools of Brookings have been closed by order of the board of health, on account of the presence of diphtheria.——The State Board of Health has ruled that as the only safe and sure prevention of smallpox is vaccination, and that as quarantine under such circumstances is unscientific and is of no avail in preventing the spread of the disease, quarantine be removed from premises occupied by smallpox.——The epidemic of smallpox in Sioux Falls is said now to be almost at an end.

## TENNESSEE.

**Society Meeting.**—At the annual meeting of the Hickman County Medical Association, held at Centerville, Dr. K. I. Sutton, Centerville, was elected president; Dr. J. W. Thompson, Centerville, vice-president, and Dr. John S. Beasley, Pinewood, secretary-treasurer.

**Staff for Day Nursery.**—Dr. James D. Bridges has been appointed attending pediatrist and orthopedist; Dr. J. H. Eugene Rosanmond, assistant pediatrist and orthopedist; Dr. Robert G. Henderson, dermatologist; and Dr. William L. Simpson, ophthalmologist, otologist, rhinologist and laryngologist to the Day Nursery, Memphis.

**Commmunicable Diseases.**—Maryville is said to be threatened with an epidemic of cerebrospinal meningitis. Four deaths have already occurred and several cases are reported. ——An epidemic of measles and influenza is reported from Robeson Fork section, near Lynnville.——Measles is reported to be epidemic at Yokely.

**Personal.**—Dr. Jack S. Dye, Chattanooga, has been appointed surgeon to the Alabama Great Southern Railroad, vice Dr. George A. Baxter, deceased.——By a fire in the office and residence of Dr. Benjamin D. Bosworth, Knoxville, February 17, damage amounting to $1,000 was caused.——Dr. Henry Berlin, Chattanooga, has returned after five months abroad. ——Dr. Henry P. Coile has been appointed a member of the Knoxville board of pension examining surgeons.

## TEXAS.

**Epidemic Diseases.**—Travis reports an epidemic of influenza. ——The smallpox epidemic at Burke is almost subsided, no new cases having been reported for 20 days.——Influenza is the prevalent disease, and has already caused a number of deaths.

**Physician Admitted to Bail.**—Dr. J. Q. Spradlin, Dallas, charged with murder in connection with the death of John D. Rogers, whom he is said to have assaulted, because he refused to pay a bill for professional services, was admitted to bail on the sum of $1,000, February 11.

**Communicable Diseases.**—The state health officer has served notice on the officials of Montague County that if prompt measures are not taken to prevent the spread of smallpox they will employ strong measures to protect the state's interest. ——Smallpox of mild type is reported northwest of Marion. ——On February 16, the British steamship *Crispin* arrived at Galveston from South America and was placed in quarantine, with 2 positive cases of yellow fever, and a report that 5 cases had occurred during the voyage. On February 18, 2 deaths occurred. There have been no new cases since that date.

## WASHINGTON.

**Tuberculosis Hospital.**—It is announced that about $50,000 has been subscribed for the establishment of a tuberculosis hospital at Seattle.

**Convicted of Violating the State Law.**—Aubrey T. Dodson, Spokane, on February 25 is said to have been found guilty of violating the state medical law. This is said to be the second conviction of this individual.

**Smallpox.**—Several cases of smallpox are reported from Kerriston.——An epidemic of smallpox is reported at Clearbrook.——Smallpox is reported to be prevalent in Spokane. ——Owing to the prevalence of smallpox in Custer and Enterprise the schools have been closed.

**Personal.**—Dr. Phillip Frank, North Yakima, has been elected president of the State Board of Health.——Dr. Edwin L. Kimball, Spokane, has been appointed a member of the State Board of Health.——Dr. James B. Eagleson, Seattle, has been appointed a delegate to attend the meeting of the Council on Education of the American Medical Association.——Dr. Alfred J. J. Helton has been appointed health officer of North Yakima, vice Dr. Thomas Tetreau.

## VIRGINIA.

**License Tax Bill Repealed.**—The lack of a constitutional vote of 51 members for the passage of the bill March 4, defeated the measure, which provides for the repeal of physicians' license tax.

**State Board of Health Bill.**—Sixty members of the house on February 25 voted for the passage of a bill to establish a state board of health, outlining its duties and fixing its powers, and carrying with it an annual appropriation of $40,000.

**Accused Physician Discharged.**—Dr. Aristides Monteiro, Richmond, arrested several months ago on a warrant, charging him with alleged malpractice, was discharged February 22 on the admission of the commonwealth's attorney that the state could not make its case without the testimony of a witness who had left the jurisdiction of the court.

**Colored Medical Society Election.**—The Richmond Medical Society at its annual meeting, February 23, elected Dr. J. Alexander Lewis, president; Dr. J. C. Carper, vice-president; Dr. Oswald B. H. Bowser, recording secretary; Dr. Albert A. Tennant, assistant secretary; Dr. Harrison L. Harris, corresponding secretary, and Dr. Robert E. Jones, treasurer.

**Communicable Diseases.**—An epidemic of measles has broken out at the State Normal School, Farmville, where there are said to be 50 cases, and several deaths have occurred.——Smallpox is reported to be prevalent near Danton, Orange County.——Failure of the physicians of King George County to agree regarding the epidemic of smallpox in the northern part of the county has caused a spread of the disease. There are now said to be 50 cases.——In Stafford County an eruptive disease, which is said to be smallpox, is reported.

## GENERAL.

**Yellow Fever.**—One new case of yellow fever was found at Santa Clara, Cuba, in a soldier, February 22, and one case was reported from Santiago February 20.

**Appropriation for Hospital.**—Representative Dalzell of Pennsylvania, on February 29, introduced, by request, a bill authorizing the creation of a tuberculosis fund of $600,000, to be disbursed by the Secretary of the Treasury, for employing experts to inquire into the methods of treating tuberculosis and to "investigate all questions relating to said methods, and the development and improvement of said methods with a view to ascertaining and publishing the best available methods of treatment for the disease."

**Cholera in the Philippine Islands.**—During the week ended January 11, there was an increase in the number of cholera cases in Manila, there being a total of 45 cases with 35 deaths, and the prevalence of the disease is still increasing. During the latter part of the week, cholera commenced to attack persons better nourished and housed. During the week there were 45 cases and 43 deaths in the town of Mariquina, which is situated on the banks of the river, above the intake from which the water supply of the city of Manila is obtained.

**The Flea and Rat Question.**—The surgeon general of the Public Health and Marine-Hospital Service has made a request for fleas for identification and for information relative to local species of fleas and rats. This request is made to the officers of his service and to health officers and physicians in general. Physicians are invited to cooperate with the bureau by furnishing such information as they may have or may be able to obtain respecting the species of fleas and rats found in their respective localities, and to secure and forward to the hygienic laboratory of the Service specimens of fleas for identification. All specimens should be collected in small vials of alcohol, using no cotton within the vial. Special care should be taken that each vial represents but a single host species, and is accompanied by full data; host, locality and collector. Fleas should be collected immediately after the death of the host. Probably the most important collections of fleas that can be made are of those species actually found on plague or leprosy patients or on lower classes of human beings in the more sordid surroundings, especially near wharves or docks.

**Mexican Notes.**—Drs. Eduardo Liceaga, José Terres, Manuel Toussaint, and Octavio Gonzales Fabela have been appointed a commission by the National Medical Academy to decide on the merits of the theses on typhus fever submitted to that body, and have summoned some of the authors of theses to give additional information regarding experimental questions. The commission will then report on the work and will decide whether any of the theses presented are sufficiently worthy to receive the $10,000 prize offered by the government.——Pneumonia is reported to be almost epidemic in the City of Mexico. During November 235 deaths were reported, and during December 338.——The organization committee of the Fourth Medical Congress has decided to hold the next meeting of the congress in the City of Mexico in 1910. The congress will discuss matters of national interest, such as typhus fever, malarial fever, leprosy, yellow fever, smallpox and mal de pinto, a skin disease prevalent in southern Mexico.——The authorities of Torreon are preparing to erect a hospital to cost about $100,000.——The bacteriologic and other laboratories of the Civil Hospital, San Luis Potosi, will be completed in a very short time.

**Railway Surgeons Meetings.**—At the first session of the Joint Surgical Association of Illinois Central, Yazoo and Mississippi Valley and Indianapolis Southern railroads, held in Memphis, Tenn., February 27 and 28, the following officers were elected: President, Dr. John E. Owens, Chicago; vice-presidents, Drs. David G. Murrell, Paducah, Ky., and W. Battle Malone, Memphis, Tenn.; secretary-treasurer, Dr. Charles B. Fry, Mattoon, Ill.; and executive committee, Drs. John E. Owens, Chicago, James H. Letcher, Henderson, Ky., Henry C. Fairbrother, East St. Louis, Ill., Eugene J. Johnson, Yazoo City, Miss., John P. Lord, Omaha, Neb., and R. E. Friebaugh. At the close of the business meeting, the members of the association presented a silver punch bowl to Dr. Owens, Dr. William F. Grinstead, Cairo, Ill., making the presentation speech.——At the annual meeting of the Association of Seaboard Air Line Railway Surgeons, held in Tampa, Fla., February 18, 19 and 20, the following officers were elected: Chief surgeon, Dr. Joseph M. Burke, Petersburg, Va.; president, Dr. Louis S. Oppenheimer, Tampa, Fla.; vice-presidents, Drs. Jarvis G. Dean, Dawson, Ga., Hillary M. Wilder, Charlotte, N. C., and Emmett H. Terrell, Richmond, Va.; secretary-treasurer, Dr. Jarrett W. Palmer, Ailey, Ga.; and executive committee, Drs. James R. Rogers, Raleigh, N. C., Southgate Leigh, Norfolk, Va., John W. Corbett, Camden, S. C., John M. Blair, Monroe, N. C., and John W. Miller, Cross Hill, S. C.

**Coming Meetings.**—The American Society of Tropical Medicine will hold its fifth annual meeting at the Johns Hopkins Hospital, Baltimore, March 28, under the presidency of Dr. James M. Anders, Philadelphia, whose address will be on the subject of "A Brief Review of the Year's Progress in Tropical Medicine." Dr. Joseph McFarland, Philadelphia, will present a memoir of the late Major James Carroll, surgeon U. S. Army; Dr. R. H. von Ezdorf, New Orleans, will give his report as delegate to the Third International Sanitary Convention of American Republics; Captain Bailey K. Ashford, assistant surgeon U. S. Army, will speak on "Puerto Rico as a Field for Research in Tropical Medicine," and Dr. Richard P. Strong, Manila, will discuss "Vaccination Against Plague." At the afternoon session there will be a symposium on the prophylaxis of malaria, at which Dr. William H. Thayer, Baltimore, will speak on "Quinin Prophylaxis"; Captain Charles F. Craig, assistant surgeon U. S. Army, Fort Leavenworth, Kan., on "Mechanical Prophylaxis," and Prof. L. O. Howard, Washington, on "Mosquito Extermination," after which Dr. Judson Daland, Philadelphia, will present a paper on "Strongyloides Intestinalis in Philadelphia," and Dr. Solomon Solis Cohen, Philadelphia, will recount his "Twenty Years' Experience with the Hypodermic Use of Quinin with Urea Hydrochlorid in Malarial Infection, with Remarks on the Thirteen to Fourteen Days' Cycle of Freedom Produced by a Single Injection." There will be an exhibition of pathologic specimens in the laboratories of the Johns Hopkins Hospital, and a dinner is to be given in the evening.——The eleventh annual meeting of the American Gastro-Enterological Association will be held in Chicago, June 1 and 2, under the presidency of Dr. John P. Sawyer, Cleveland, Ohio.——The next annual meeting of the American Orthopedic Association will be held June 4, 5 and 6 at the Chicago Beach Hotel, Chicago

## CANADA.

**Annual Health Report.**—The eleventh annual report of the Board of Health of British Columbia showed smallpox present during the year in nine centers—38 cases in all, in every instance imported from the United States. The comparison with the state of Washington, which had 1,100 cases, speaks well for the prompt action of British Columbia's health officer. Dr. Fagan, the secretary, said that bubonic plague did not secure a footing in British Columbia in 1907. Diphtheria was responsible for 14 deaths out of 98 cases reported. He recommended that the Dominion government establish a laboratory for the supply of sera. Dr. Fagan also recommended that school teachers be qualified to impart instruction in sanitary science.

**Canadians Regret Senn's Death.**—At a recent meeting of the Ottawa Medico-Chirurgical Society, resolutions, moved by Sir James Grant and seconded by the president, Dr. John L. Chabot, were adopted, setting forth the loss sustained to the medical world by the death of Dr. Nicholas Senn. The resolutions stated that "few men have contributed more toward the high status of science in the neighboring Republic than Senn, who, as an original thinker, occupied a unique position, and his contributions cover a wide range in surgery and literature. What Syme was to Scotland, in surgery, Senn was to America." . . . "A nobler profession there is not in the world, and few have left a more remarkable record than Senn." . . . "The members of the Ottawa Medico-Chirurgical Society desire to express their profound sympathy with the profession of Chicago in the great loss sustained by the death of Dr. Senn, possessed of a kindly and sympathetic spirit and absolute honesty of purpose."

**A Tuberculosis Conference.**—At a tuberculosis conference held in Toronto, March 4, by the National Sanitarium Association, the governor general presided and delegates were present from 44 municipalities and 17 counties of Ontario. Unanimously a resolution was passed asking the Ontario government to increase materially its annual grants toward stamping out tuberculosis in the province. Mr. W. J. Gage, the father of the National Sanitarium Association, which has done such excellent work in this line in Ontario, stated that the 30,000 deaths from tuberculosis in Ontario in the past ten years, represented about 120,000 cases always in existence in the province. In the past seven years there had been a decrease of 15 per cent. throughout the province from this disease—a condition which is encouraging. A special delegation from this conference asked the government that the grant for the maintenance of consumptive patients be increased from $1.50 to $5 a week. Premier Whitney promised that his cabinet would give this question more than ordinary consideration.

## FOREIGN.

**Cholera at Mecca.**—The *Public Health Reports* state that cholera is raging among the pilgrims at Mecca as well as at Djeddah, where the deaths have lately averaged over 400 a day.

**Carnegie's Gift to the Koch Endowment.**—Andrew Carnegie has extended his munificence to Germany, and has just given to the Koch Endowment Fund $125,000. This brings the total of the fund to date to $200,000

**Hospital for Foreign Cholera Patients in Egypt.**—Consul-General Iddings reports that the Egyptian government will equip and administer in Cairo a hospital for the reception of foreign patients suffering from cholera, in case the disease appears.

**Registration of Mentally Defective Individuals in Germany.**—A recent decree orders registration by name and community of all individuals known to be insane or mentally defective and idiots, living outside of the state institutions, whether in their own families or elsewhere.

**Women Medical Students in France and Germany.**—It is stated that 150 women are taking medical courses in Germany and 600 in France. There are about 100 women physicians in Paris, most of them employed in an official capacity in the private schools or in the government post or telephone service, etc. A number of women physicians have been appointed medical officers for passenger boats on the Mediterranean.

**The French Society for Tropical Pathology.**—Notwithstanding all the work that has been done in France and its colonies in the study of tropical diseases, there has been no organized effort in this line. This gap has been recently filled by the founding of the Société de pathologie exotique. Laveran is the president of the new society, which has made the Pasteur Institute its headquarters. Here Laveran has long had a modest laboratory at his disposal, and is busily at work now on trypanosome affections.

## LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, Feb. 29, 1908.

### Successful Prosecution of the Vendor of Tucker's Specific for Asthma.

Mr. A. Q. Tucker, the British agent for the sale of Tucker's Specific for Asthma, who, as reported in a previous letter, recovered $5,000 damages from the *Lancet* for stigmatizing his business as fraudulent, has been prosecuted under the pharmacy act for selling a bottle containing certain poisons, to wit, cocain and atropin, bearing the words, "Nathan Tucker, M.D., Specific for Asthma, Hay Fever and All Catarrhal Diseases of the Respiratory Organs" and not labeled with the word "poison" and the name and address of the seller. Analysis showed that the bottle contained 3.6 grains of cocain and 0.91 grains of atropin to the ounce. A penalty of $25 and $26 costs was imposed. The *Lancet* gives the details of a case of alleged cocain poisoning from the use of this preparation. A married woman, aged 36, had been suffering for some time from asthma. A physician was called before she died and he discovered symptoms of cocain poisoning and refused to give a certificate of death. At the inquest it was shown that she had been taking the Tucker preparation for about two years.

### Damages Recovered from a Quack for Fraudulent Misrepresentation.

The following case marks a new departure in the struggle against quackery, for it appears to be the first in which damages have been obtained against a quack for fradulent misrepresentation. Though the law has thus been shown to furnish a remedy against the misrepresentation of the quack, strange to say, it does not appear to have been used in this way before. At Manchester a woman sued "Dr. Hall's Hygiene Company" for damages sustained by reason of the defendant falsely holding himself out as a qualified medical man, competent to cure cancer, and by fraudulent misrepresentations inducing the plaintiff to consult him instead of a qualified medical man; also for damages for injuries sustained by the defendant's negligence and want of skill, and for the return of fees paid. The defendant advertised himself by means of pamphlets and lectures as specially qualified to deal with diseases of women, including tumor and cancer of the breast. The plaintiff consulted him about a swelling in her breast about the size of a marble, wishing to know if it was cancer. He examined it and said, "No; this is not cancer, but congestion. I will give you remedies which will dissolve it." He ordered her to foment the breast and prescribed ointment, herbs and mixtures. The swelling increased and he then prescribed abdominal baths, olive oil and almond oil. The swelling spread to the armpit, and he prescribed fomentation with poppy heads, cayenne pepper and vinegar. After a year's treatment the swelling and pain was so great that the patient consulted a physician who advised immediate operation. An extensive operation was performed, but the disease was too advanced for more than temporary relief. The patient may live for six months. The jury awarded her $3,000 damages.

### Another Victim of the X-Ray.

In a previous letter the case of Mr. Hall Edwards, the *x*-ray specialist of Birmingham, was reported. Dermatitis accompanied by warts developed on the backs of his hands. He has suffered from intolerable pain for five years, for which all treatment has proved almost useless. The malady assumed a malignant form, especially on the left hand, from which it spread up the arm. Sleep can be obtained only by means of opiates. Examination under the *x*-rays showed that the bones had become diseased and amputation of the forearm a little below the elbow was performed. Unfortunately, the condition of the right hand is so bad that it is feared that it may share the same fate. The case is a very sad one, for Mr. Edwards is in the prime of life—49 years of age. On the introduction of the *x*-rays he took up the subject with great enthusiasm and was one of the pioneers in Great Britain. Indeed, the first operation in which use was made of the *x*-rays—removal of a needle from the hand—was performed by the aid of a photograph taken by him. He was radiographer to the Birmingham General Hospital and the Queen's and Orthopedic and Spinal hospitals. At the time of the South African War he volunteered his services. He organized a complete field equipment which rendered invaluable service, and on his return first noticed the signs of dermatitis in the form of warts. It seems that his devotion to the soldiers was the culminating cause of his malady. At that time the use of gauntlets, leaded glass screens and other devices for protection from the *x*-rays had not been introduced. Undeterred by his terrible affliction, he has continued his work. His case has aroused widespread sympathy, which will probably take the practical form of raising a testimonial on his behalf. He intends to continue practice with the help of an assistant.

### The Influenza Epidemic.

Influenza is still prevalent in London. The deaths directly due to the disease jumped to 84 from 34, 32 and 35 of the previous three weeks.

## VIENNA LETTER.

(*From Our Regular Correspondent.*)

VIENNA, Feb. 20, 1908.

### Action for Damages Against a Gynecologic Clinic.

A woman, who for some time had been an in-patient in Professor Schauta's gynecologic clinic, has instituted an action for damages, alleging injuries to her spine caused by means employed to produce artificial respiration after syncope from anesthesia. An abdominal operation was done under chloroform anesthesia; when well under the influence of the anesthetic, syncope occurred and artificial respiration and other means had to be employed to resuscitate the woman. She was discharged from the clinic apparently well a few days later, and after a few days' stay at home she noticed that something was wrong with her spine, the mischief, in her opinion, being due to the means employed to revive her. She demanded $10,000 damages from the professor, whom she held responsible for the operation, and his first assistant, Dr. Burger, who operated on her, and charged them both conjointly with the clinic. At the hearing of the case, Professor Schauta disputed his personal responsibility, claiming that the first assistant at a clinic is fully responsible for all operations performed by him. The previous history of the patient showed that she had been treated for various tuberculous lesions for several years, including tuberculosis of the cervical spine, and it was claimed that a traumatic origin of the spinal trouble complained of could not be supposed, since the nature of the constitutional disease explained the symptoms. Under the weight of this evidence the woman thought it best to withdraw the charge unconditionally.

### A New Epidemic Act in Austria.

As at present in Austria there is no legal means of enforcing the isolation of a person ill with an infectious disease, the chiefs of the sanitary department have prepared a bill which will shortly be brought before the house of commons. At the same time the present rules for disinfection have been modified in so far as compulsory disinfection of lodgings has been restricted to diphtheria, variola, scarlatina, erysipelas, plague, cholera, pertussis, parotitis and rubeola. Rooms inhabited by a tuberculosis patient must be disinfected before being occupied by anyone else. All the above-mentioned diseases must be reported as well as trachoma, puerperal fever, lyssa, or rabies, trichinosis, and recurrences and diseases brought on by the consumption of the meat of animals that had swine pest. A feature of the new bill is a provision for paying physicians for each notification.

# Therapeutics

**[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]**

## The Influence of Diet on the Liver.

Dr. Chalmers Watson, Edinburgh, writing in the *Lancet*, Oct. 12, 1907, describes the condition of rats' livers after the animals were given different diets. The percentage of weight of the liver in meat-fed rats was, as a rule, considerably greater than in the control bread-and-milk fed rats. From the examination of the livers of meat-fed rats and those of bread-and-milk only fed rats and those of rats which had not been in captivity and hence were supposed to have eaten varied nitrogenous foods, it seemed proved that the meat-fed and the naturally fed rats had much larger livers than the bread-and-milk fed rats. The average liver weight of the meat-fed rats was 6 grams, while the average liver weight of the bread-and-milk fed rats was 4 grams.

From these experimentations it may be advisable to put a patient with enlargement of the liver from a cause other than tumor on a bread-and-milk diet.

## Psoriasis.

Dr. Kanoky, Kansas City, (*Dietetic and Hygienic Gazette*, January, 1908), discusses the treatment of this disease. If the diseased areas are thick and indurated, he advises scraping off the scaly tissue with a sharp curette. "The patches should then be thoroughly scrubbed with hot water (rendered alkaline by the addition of borax or sodium carbonate) and the liniment of soft soap, using a stiff bristle nail brush."

When the disease is mild and the scaly patches are few in number and the parakeratosis is slight in degree, he obtains good results from the following:

| ℞. | gm. | | |
|---|---|---|---|
| Chrysarobini | 1 | or | gr. xv |
| Liquoris guttæ perchæ (N. F.) | 10 | | ʒiiss |

M. et Sig.: Apply at night, with a camel's hair brush.

In a few days the resulting inflammation causes increased desquamation.

When the psoriatic patches are completely denuded of scales he advises the use of a white precipitate ointment such as:

| ℞. | gm. | | |
|---|---|---|---|
| Hydrargyri ammoniati | 1 | | gr. xv |
| Phenolis | 2 | or | |
| Balsami peruviani | 2 | | āā, gr. xl |
| Petrolati albi | 45 | | ʒiss |

M. et Sig.: Apply at night, rubbing in well.

When the disease is severe, especially in regions where there is usually marked thickening, Kanoky says that nothing is more reliable than Dreuw's ointment. "Care, however, must be taken not to apply it over too large a surface at one time." The formula is:

| ℞. | gm. | | |
|---|---|---|---|
| Acidi salicylici | 10 | | ʒiiss |
| Chrysarobini | 20 | | |
| Olei rusci (Oil of birchwood) | 20 | or | āā, ʒv |
| Saponis mollis | 25 | | |
| Petrolati | 25 | | āā, ʒvi |

M. et Sig.: "Rub in well, with a stiff brush, for five evenings. Then take hot baths on three sucessive evenings, using applications of olive oil in the meantime (to soften the skin). Repeat if necessary."

"When there are patches of psoriasis on the face or scalp only the white precipitate ointment should be used, as the chrysarobin is likely to give rise to severe erythema and edema in these regions."

Of all internal remedies Kanoky finds arsenic the most trustworthy, and advises the "Asiatic pill" which is as follows:

| ℞. | gm. | | |
|---|---|---|---|
| Arseni trioxidi | 0.25 | | gr. iv |
| Piperis | 2.50 | or | gr. xl |
| Pulveris gentianæ compositi | | | |
| Glycerini | q. s. | | āā, q. s. |

M. et fac pilulas 100.

Sig.: Commence with one pill before each meal, and increase one pill every second day until the full physiologic effect is secured. Then decrease one pill a day every second day.

There is no chemical or pharmacologic reason why this preparation of arsenic should be any more valuable than any other preparation. The very fact, as Kanoky states, that the average person may take more arsenic in this manner than in any other way shows that the pills do not readily dissolve and the arsenic does not get into the system. In pushing arsenic for physiologic effect either very soluble tablets or a liquid preparation, as Fowler's solution, should be the preparation selected. It is not a question of how much arsenic a patient can take before getting physiologic effect; it is a question of obtaining the physiologic effect, and if one drop of Fowler's solution will do as much as two or three of the "Asiatic pills," it simply shows that the "Asiatic pills" are not absorbed. Also, arsenic should be given after meals, and not before. Hence the best preparation is:

| ℞. | c.c. | | |
|---|---|---|---|
| Liquoris potassii arsenitis | 25 | or | fl ʒi |

Sig.: One drop, in water, three times a day, after meals.

Increase this dose one drop a day, viz., give four drops the second day, five drops the third, and so on, until the physiologic action is in evidence, that is, until any of the following symptoms appear: Pain in the stomach, nausea, vomiting, diarrhea, reddened eyelids, or puffing under the eyes in the morning. Any of these symptoms should cause the arsenic to be stopped for a day or two and then begun at a smaller dose than that which caused the effect. Also the urine should be frequently examined for albumin and blood.

Kanoky says that the effect of arsenic is not only curative, but prophylactic as well, and it should be repeated at intervals long after the attack has subsided.

If arsenic fails to produce satisfactory results, he advises the use of potassium or sodium iodid.

He states that thyroid extract sometimes exerts an almost magical influence in this disease. It should be remembered that the dose of thyroid should not be large; a small dose should be taken for a considerable length of time to cause beneficial systemic results. Large doses, or even medium doses long continued, may cause serious disturbances.

| ℞. | gm. | | |
|---|---|---|---|
| Glandularum thyroidearum siccarum | 2 | or | gr. xxx |

Fac capsulas 20 (dry).

Sig.: A capsule, with water, three times a day, between meals.

"In stubborn, obstinate psoriasis the *x*-ray and chromotherapy may be used with advantage."

## Shampoo Mixtures.

As a physician is occasionally asked to prescribe something for use as a hair tonic or to cleanse the scalp, and is likely to refer the patient to a druggist or to advise some proprietary preparation because he knows of no suitable formula, the following may be of service:

LIQUID EGG SHAMPOO.

| | |
|---|---|
| Soft soap | 2 ounces |
| Whites of | 4 eggs |
| Potassium carbonate | 1 ounce |
| Tar water | 1 pint |
| Glycerin | 2 ounces |
| Orange flower water, enough to make | 2 ounces |

Beat the whites of the eggs into a froth while gradually adding the tar water. Dissolve the soap in a mixture of glycerin and six ounces of orange flower water. Mix the two solutions and make up to two pints with orange flower water. —*Druggists Circular.*

Also:

| | |
|---|---|
| Transparent soap | 4 ounces |
| Glycerin | 2 ounces |
| Whites of | 3 eggs |
| Tincture of green soap | 1 ounce |
| Oil of rosemary | 45 minims |
| Oil of rose geranium | 30 minims |
| Water, enough to make | 2 pints |

Melt the soap in twelve ounces of water, add the glycerin and stir until cool; then add the green soap and the oils. Mix the whites of the eggs with eight ounces of water and stir into the soap mixture. Shake well, let stand for twenty-four hours, and strain through flannel.—*Druggists Circular.*

### Massage Cream.

Especially at this time of the year, physicians are frequently asked to prescribe massage or face creams, and the following forms may be used:

GREASY CREAM.

| | |
|---|---|
| Cacao butter | 2 ounces |
| Lanolin | 2 ounces |
| Hard paraffin | 4 ounces |
| Soft paraffin | 8 ounces |
| Rose water | 4 ounces |

"Melt together the fats, and when the mixture begins to congeal, beat in the rose water with an eggbeater, continuing the beating until the cream has set."

NON-GREASY CREAM.

| | |
|---|---|
| Casein, moist | 1 pound |
| Glycerin | 3 ounces |
| Oil of rose geranium | 30 minims |
| Boric acid | 90 grains |
| Eosin | enough |

BATH POWDER.

| | |
|---|---|
| Sodium bicarbonate | 8 ounces |
| Tartaric acid | 6 ounces |
| Rice flour | 16 ounces |
| Oil of rose geranium | enough |

### Chilblains.

| ℞. | gm. | | |
|---|---|---|---|
| Camphoræ | 1 | 50 | gr. xx |
| Balsami peruviani | | 50 | gr. vii |
| Olei amygdalæ dulcis | 10 | or | 3ii |
| Adipis lanæ hydrosi | | | |
| Aquæ rosæ | āā 25 | | 3vi |

M. et Sig.: Use externally.

### Arsenic.

Arsenic as a medicament has done more harm than it has ever done good, because the symptoms of its bad action are many times hidden and slow in development, hence have not been noted.

The acute signs of overdosage with arsenic, as gastro-intestinal disturbances, epigastric pain, puffing under the eyes, and reddened eyelids, are well understood, but late symptoms of overuse of arsenic as disturbances of the kidneys and a breaking down of the red blood corpuscles (although at first and in small doses, so-called tonic, arsenic will increase the number of red cells) are not noted.

The puffing under the eyes in the morning in patients taking arsenic is doubtless due to irritation of the kidneys, and careful examinations of the urine in patients taking large doses of arsenic or in whom small doses have been long repeated, will frequently show albumin, often blood, and finally even severe kidney disturbances.

Large doses of arsenic given hypodermatically for anemia or leukemia can not only cause the above harm, but can cause multiple neuritis.

The conclusions to be drawn from the above are: If arsenic is given, it should be given in small doses only, and during its administration the urine should be carefully watched. When it is deemed best gradually to increase the dose to the point of physiologic symptoms, it should be given in solution, and best in the liquor potassii arsenitis, or Fowler's solution, and the dose should then be increased no faster than one drop a day, not one drop a dose.

When a small dose of arsenic is desired for its stimulant and probably tonic action, the trioxid of arsenic may be given in soluble tablet, or in pill or capsule, after meals, combined with quinin, iron or strychnin, any one, or all, if desired.

It is a mistake to believe that chorea, chlorosis or anemia can not be well treated without arsenic, and if careful discriminating observations are made it will be found that arsenic as a tonic may be omitted without loss in any tonic treatment.

### Chancroidal Bubo.

Dr. Henry H. Morton, Brooklyn, N. Y. (*Medical Record*, Jan. 25, 1908), advises for this condition immediate rest in bed and warm applications; he believes that resolution will take place as readily with warm applications as with applications of ice. He finds injections into the enlarged gland of antiseptic solutions, such as nitrate of silver, phenol or bichlorid of mercury, to be useless. Sometimes an alcohol wet dressing, either gauze wet with pure 95 per cent. alcohol and allowed to evaporate slowly by being covered with perforated rubber tissue, or a dressing of alcohol one part and water two parts, rather tightly covered with rubber tissue or oil silk, are of advantage. Morton finds tincture of iodin applications of no value as an absorbent.

As soon as fluctuation develops, he changes the warm applications to hot ones to hasten the breaking down of the gland, and after it is thoroughly broken down he makes a small incision with a double-edged knife and evacuates the pus; then a 10 per cent. iodoform glycerin emulsion is injected into the cavity.

The injection is made three times at the first sitting, the first two injections being allowed to run out, the last one being retained. The wound is then bandaged over night with fomentations of a solution of the acetate of aluminium. [The strength of the solution is not mentioned. The National Formulary recognizes a liquor alumini acetatis of 7.58 per cent.]

The next day the contents of the bubo are squeezed out and the iodoform injection is again made three times as before. The gland is then bandaged and left undisturbed for five or six days. At the end of that time, in the great majority of cases, the bubo is healed, and the patient requires no further treatment.

Morton believes that improper treatment of the chancroid is often the cause of the bubo. He does not believe in cauterizing the sore with nitrate of silver, believing that the effect of this caustic is superficial and produces a crust which allows the specific organism, Ducrey's bacillus, to migrate to the inguinal lymph glands

# Pharmacology

## FRUITOLA.

### A Fake Remedy for Gallstones.

WEST ELKTON, OHIO.

*To the Editor:*—A neighboring practitioner has been giving treatment for gallstones, his patients paying him $50 if they pass any stones. I think the remedy he uses is sold under the name of "Fruitola." The patients are said to pass hundreds of gallstones after using it. Have you any account of the stuff? I think the concretions, which pass without pain, are soft and float when fresh. I believe that olive oil is the bulk of the remedy. A. W. Y. CONARROE.

ANSWER:—Fruitola is a "patent medicine" which is alleged to have the wonderful power of relieving appendicitis or any intestinal inflammation without an operation. It is also said to be a system-cleanser, to remove gallstones and to cure all stomach trouble. Dr. E. E. Flagg of Mooreland, Okla., writes us that he has obtained identically the same results with large doses (2 ounces) of olive oil.

When olive oil was suggested for the treatment of gallstone colic, it was noticed repeatedly that after its administration the patient passed a considerable number of small lumps which were supposed to be gallstones. Chemical examination of these concretions showed, however, that they mainly consisted of soap which had been produced by the digestion of the oil. This observation has since been made use of by nostrum manufacturers to convince physicians and their patients of the efficiency of their preparations in securing the expulsion of gallstones. A simple examination will usually show the true nature of these bodies, since they disintegrate readily when stirred in water. It is probable that they consist of fecal matter mixed with the mass of soap.

The value of olive oil in painful affections of the gastrointestinal tract is well established and there is much clinical evidence to its soothing action in cases of gallstones, but the physician should not be misled into supposing that he has secured the elimination of a large number of gallstones because the patient passes a large number of lumps of soap, and he should be equally cautious in admitting the claims of the nostrum manufacturers that their remedies secure the passage of gallstones unless he has the opportunity to examine and test the stones for himself.

## "ETHICAL SPECIALTIES."

### Pullen-Richardson's Nostrum Nomenclature a Display of Verbal Pyrotechnics.

Dr. F. O. Young, Lexington, Ky., sends us a pamphlet put out by the Pullen-Richardson Chemical Company, of St. Louis, with the laconic comment: "This is the largest 'bunch' I have ever known one house to get out." The "bunch" referred to is a list of:

ETHICAL SPECIALTIES FOR THE PRACTICAL PHYSICIAN.

Here they are, or at least some of them:

| | | | |
|---|---|---|---|
| Acigestine. | Broncodine. | Hemarobin. | Pinastrin. |
| Alkagestine. | Buchurine. | Ironidine. | Thebaline. |
| Alkamenthine. | Calciodine. | Manacaline. | Turpoline. |
| Boromenthyline. | Ferrocin. | Paskoline. | |
| Bromoloine. | Glycogine. | Petrolidine. | |

To relieve the monotony of "ine" endings we have such as:

| | | | |
|---|---|---|---|
| Casenol. | Necodol. | Picadol. | Phospholax. |

## Hypnotics.

Probably in no other department of therapeutics can there be found such a contrast between methodical application of science to the discovery of new remedies and the haphazard, unscientific methods by which their clinical value has been determined than in the discovery and use of hypnotics. While the production of these remedies has been made possible by most careful experimentation and the intelligent application of chemical theory, their use has been determined largely by blind dependence on the interested statements of the manufacturers and by hasty trials made in all sorts of cases, without any systematic determination of the special cases to which they are best adapted. This fact is emphasized in a review of progress in this field by A. Homburger. (*Med. Klinik*, Nov. 3, 1907.)

In hypnotics the relation between chemical constitution and physical properties on the one hand and pharmacologic activity on the other has been so carefully worked out that certain laws can be formulated by which it can generally be predicted in what direction the hypnotic power of a certain substance will be modified by a change in its chemical constitution.[1]

In marked contrast to a systematic working out of a scientific basis for the preparation of new remedies in the chemical laboratory is the fact that the clinical application of these remedies, introduced under proprietary auspices, has been without plan, empirical and confusing.

As Homburger says: "Very soon after the introduction of a new preparation there is sure to be a genuine flood of articles in medical journals, to the effect that the remedy has shown itself reliable and relatively harmless, and presents a gratifying addition to our therapeutic resources; 'gratifying' means in this connection merely that a new possibility for aimless changes in remedies is greeted with a feeling of relief."

These communications, whose object is to popularize the product for commercial reasons, afford no basis for a just estimate of the value of the remedy and its special indications and contraindications, and give no warning as to the need of caution in its administration.

Homburger further calls attention to the fact that the more reliable of these reports proceed, as a rule, from the insane asylums, and concern a class of cases in which the condition of mental excitement gives the indication for a class of remedies different from that which is needed for the insomnia which is frequently encountered in general practice. In his opinion, hypnotics are indicated in two distinct classes of cases, in which two equally distinct classes of drugs should be used: In the first class, the mentally excited insane person, or the restless individual suffering from physical disease must be put to sleep to avert danger to the physical organism, and in this class derivatives of the alcohol and chloroform groups, such as chloral or paraldehyd, which are easily absorbed and act quickly, are indicated. In the second class, the power to sleep, which has been temporarily or periodically reduced, must be restored. This may be accomplished by improving the hygienic conditions, regulating the diet, physical therapeutics,

1. The following principles are laid down by Homburger:

Substances which are active as hypnotics are soluble in oils and in the fatty constituents of the nervous system, and they must be somewhat soluble in water and in the body fluids generally to permit of their absorption and conveyance to the nerve centers.

The hypnotic power of a substance corresponds to the partition coefficient of its solubility in oil and water, which means its solubility in oil divided by its solubility in water. The higher its partition coefficient the greater its hypnotic power.

In bodies belonging to the same class as alcohols, etc., the compound with the least branched carbon chain has the strongest hypnotic power, and the one with the most divided carbon chain has the weakest. The introduction of the halogen elements, chlorin or bromin, into the molecule increases hypnotic strength, while the introduction of hydroxyl groups weakens it. In all these cases the partition coefficient varies with the hypnotic power. In general, with some exceptions, the introduction of additional radicals of the higher alcohols, such as ethyl or propyl, increases the hypnotic power, and this increase is accompanied by a rise in the partition coefficient; but this rise sometimes fails to occur, and then the expected increase in the hypnotic power is not observed. This is well illustrated by the effect of the introduction of ethyl groups into the sulphone derivative of methane. Sulphonal (now official as sulphonmethanum), containing two methyl groups and two ethylsulphone residues, has a comparatively low partition coefficient and weak hypnotic power; the introduction of ethyl in place of one methyl group forms trional (now official as sulphonethylmethanum), which has a higher partition coefficient and greater hypnotic power. The substitution of a second ethyl group for the last methyl group forms tetronal (diethylsulphondiethylmethan), but in this case the partition coefficient as well as the hypnotic power becomes less, indicating a limit to the increase in hypnotic power by the introduction of the higher alkyl groups.

Similar illustrations may be given of the application of chemical principles to synthesis of new hypnotics, by which such remedies as hedonal, veronal and bromural have been obtained.

Hypnotics may be divided, chemically, into three great groups, viz.: The chlorinated alcohols and aldehyds, the sulphones and the derivatives of urea and other amino compounds. Therapeutically, the last two groups appear to be closely allied.

or, as a last resort, the temporary use of drugs. Of these, the difficultly soluble compounds of the sulphone and urea groups—trional, veronal (diethylmalonylurea) and bromurol (alpha-monobrom-isovaleryl-urea) are the most suitable. The smallest dose necessary to secure sleep of normal length should be administered, and the dose should be gradually diminished as the power of sleep returns. In general, the effective dose is smaller than is generally assumed. Much depends on proper administration so as to secure the ready absorption of the remedy.

The careful and methodic establishment of the indications for the individual hypnotics offers to the therapeutist a field, the cultivation of which may yield results as brilliant and as certain as the scientific synthesis of these remedies has been. Meanwhile we should remember that the first reports of a new remedy are sure to be interested and somewhat biased, and that they should study the remedies they already have with a view to determining their exact indications and manner of use rather than adopt the newest untried proprietary in the market. Our present armamentarium contains satisfactory remedies for the symptomatic treatment of most diseases.

### Formula of Godfrey's Cordial.

MIDLAND, TEXAS, Feb. 24, 1908.

*To the Editor:*—We are anxious to know the formula of "Godfrey's Cordial." Particularly, we want to know if it contains any opium, as we think that we have had a case of poisoning from this preparation in a baby two days old.

W. W. LYNCH and JOHN B. THOMAS.

ANSWER:—Various formulas for "Godfrey's Cordial" have been published from time to time, and in the past the product sold under this title was liable to vary in composition. Now "Godfrey's Cordial" is given in the National Formulary as a synonym for "Mistura Sassafras et Opii," and under the Food and Drugs Act, articles now sold under this name must correspond in composition to the National Formulary preparation, the formula of which is:

| | Metric. | Apothecaries. |
|---|---|---|
| Oil of sassafras | 1 c.c. | m. xv |
| Tincture of opium (U. S. P.) | 35 c.c. | fl℥i |
| Alcohol | 50 c.c. | fl℥iss |
| Potassium carbonate | 8 gm. | gr. cxv |
| Molasses | 325 c.c. | fl℥x |
| Water, a sufficient quantity to make | 1,000 c.c. | fl℥xxxii |

Mix the tincture of opium with the alcohol in which the oil of sassafras had previously been dissolved. Dissolve the potassium carbonate in about 500 c.c. (or 16 fluid ounces) of water, mix this with the molasses, then add the mixture first prepared, and lastly, enough water to make 1,000 c.c. (or 32 fluid ounces). Allow the mixture to become clear by standing, then pour off the liquid portion and preserve it for use.

Four c.c. (1 fluidram) contain about 0.12 c.c. (2 minims) of tincture of opium, corresponding to about 0.013 gm. (1/5 grain) of opium.

Average dose: Infants, 0.65 c.c. (10 minims).

### Jayne's Expectorant.

Newspapers recently chronicled the death of a child in Cincinnati from an overdose of a "patent medicine." We communicated with the coroner, who kindly sent us a copy of the verdict. After recounting in the usual fashion the name, age, etc., of the deceased, the verdict goes on to state:

> The testimony shows that this child had been troubled with a cough for the past five years; that he had always been quite pale and had slept a great deal. The statement is also made that in this family JAYNE'S EXPECTORANT had been used for all the children.
>
> This proprietary remedy has on its label the statement that each fluid ounce contains 15 per cent. of alcohol and one and one-fifth grains of opium. The single dose of this remedy given in this case could not have caused the child's death, but there is no doubt that the continued use of the remedy containing opium, even in a comparatively small dose, is harmful, and especially so to infants and children.
>
> The pale color and the drowsiness can be accounted for by the prolonged use of opium, and the attention of parents can not be too strongly called to the danger of the use of such remedies for children as those that owe their efficacy to this drug. OTIS L. CAMERON, Coroner.

## Correspondence

### Dissemination of Literature on Alcohol.

HARTFORD, CONN., March 4, 1908.

*To the Editor:*—During 1907 over 200 papers, lectures and pamphlets were published in Europe and America, presenting different phases of alcoholism and inebriety, purely from a scientific point of view. Many of the authors complained that these papers were not widely read and were practically lost, because they did not reach medical men interested in the subject. The Federation Bureau of this country, organized nearly two years ago, with the object of collecting and disseminating all facts concerning the alcoholic problem, in connection with the International Bureau of Europe having the same purpose, proposes to secure a list of medical men and scientists interested in the scientific study of the alcoholic problem. This list is to be made available for authors and students who write on this subject and wish to address a special audience of physicians, not only to increase their interest, but to stimulate farther studies of the subject. Such a list will enable the bureau to extend its work of accumulating facts from the most reliable sources, and to keep both authors and readers in close touch with all that is done. This is a practical effort to group and concentrate the experience and observation of medical men and make them acquainted with what is being done in the scientific study of the alcoholic phenomena. All physicians who are interested in the scientific literature, research work and studies of medical men at home and abroad, are urged to send their names and addresses so as to be registered and receive copies and abstracts from authors and persons who may wish to have their work examined and read by interested parties. As chairman of the board of directors of the Federation Bureau I urgently request all physicians interested in this subject to send me not only their own names, but lists of reputable physicians who would care to receive some of the most important literature coming from the press and to hear what is said in the scientific world concerning this problem. T. D. CROTHERS, M.D., Chairman.

**Tuberculosis in Ireland.**—According to *Public Health Reports* of the U. S. P. H. and M.-H. Service, the movement for the prevention of tuberculosis in Ireland has received an additional impulse by the holding of a tuberculosis exhibition in Dublin, similar to those that have been held in this country. Statistics show that the death rate from tuberculosis in Ireland has been increasing while in England and Scotland it has been remarkably lessened by sanitary measures. In 1864 Ireland stood lowest of the three countries, the rates being 2.4 per 1,000 living, against 3.3 for England and 3.63 for Scotland. In 1905 the order was changed so that England had a rate of 1.6, Scotland 2.1 and Ireland 2.7. The explanation for this may be looked for in the depletion of the country of its able and healthy men by emigration, an increased percentage of those less well able to withstand the attacks of disease being left among the residue and partly by the fact that emigrants who have contracted the disease in other countries have come home to die. The great suffering from tuberculosis in Ireland has been among the poor. Prevention there includes the same measures as elsewhere, such as segregation, improved housing, control of milk and meat supply, and of unhealthy trades, better school accommodations for children, and material aid to those families which are unable to provide for tnemselves the proper means of prevention and treatment. The great desirability of tuberculosis dispensaries is urged in a letter from the Countess of Aberdeen, written on behalf of the Women's National Health Association to the joint committee of the Meath Hospital and County Dublin Infirmary. She suggests that the clinical hospitals of Dublin devote a morning once a week to the exclusive treatment of consumptive patients.

# Miscellany

## The Sanitary Responsibilities of Public Carriers.

[EDITOR'S NOTE.—We have been asked by the secretary of the Buffalo Academy of Medicine to publish the following correspondence which is self-explanatory.—ED.]

BUFFALO ACADEMY OF MEDICINE.

TO SURGEON-GENERAL WALTER WYMAN, U. S. Public Health and Marine-Hospital Service.

Typhoid fever is increasingly frequent among the passengers and employés of the steamers sailing on the lakes.

An extensive and dangerous epidemic of enteric fever prevailed among the passengers and crews of the S. S. *Northwest*, the facts being as follows:

The S. S. *Northwest* is a passenger boat of the Northern Steamship Company, plying between Duluth and Buffalo. About the first of August cases of typhoid fever appeared among the passengers and employés, the sick being landed at Buffalo, Detroit and Duluth. For a period of about three weeks at each stopping place patients were removed from the steamer. Many of the passengers were taken ill after leaving the boat and were cared for at their homes or at various hospitals. The condition of affairs grew so serious that on August 17 the steamer was inspected by the health office of Buffalo.

The milk was found to be foul, the drinking water contained the colon bacillus, and parts of the boat were in an insanitary condition. The vessel was supplied with ordinary lake water, possibly drawn from the polluted Detroit or Buffalo rivers. The cause of the disease is believed by the health office of Buffalo to be contaminated water.

The total number of cases of typhoid fever originating on the *Northwest* is not accurately known, as the cases are widely scattered through the country—at Buffalo, Detroit, Duluth, New York, Louisville, Auburn, Niagara Falls, Hamilton, Dunkirk, Helena, etc., but it is believed to be about 200. Half the crew was sick. As a result of the epidemic there were many fatalities. The calamity is the most terrible of its kind known in the history of lake navigation.

No inspection of the boat was made by the Marine-Hospital Service at this time, nor was any attention paid by your service to the catastrophe on the *Northwest* until Dr. Irving M. Snow and Dr. Allen Jones, and Hon. D. S. Alexander of Buffalo made a statement to Dr. Wyman and asked the U. S. Marine-Hospital Service to investigate the prevalence of typhoid fever on the vessels of the lakes, and especially to report on the conditions existing on the steamer *Northwest* in August, 1907. We are informed that the U. S. Marine-Hospital surgeons are now collecting data on the subject. In pursuance of your orders, Dr. Carmichael of Buffalo asked the officials of the *Northwest* to furnish him with a complete list of the passengers and employés of the *Northwest* for the season of 1907. This request was refused by the officials of the corporation owning the boat.

A mere tabulation of statistics of the marine hospitals will not suffice. We believe that a thorough investigation will show an alarming state of affairs.

Nearly all the lake vessels use water drawn from any location convenient at the time. The water of the great lakes, particularly Lake Erie, is increasingly contaminated by the drainage of great cities—Detroit, Buffalo, Cleveland, Ashtabula, Toledo, Sandusky, etc. Typhoid fever is endemic at Niagara Falls.

In the interest of justice and for the protection of the enormous number of tourists, sailors and other citizens concerned in the lake commerce, we ask that the epidemic of typhoid fever on the steamer *Northwest* be reviewed by skilled specialists with legal powers. As an official of the U. S. Marine-Hospital Service has been refused access to important documents by the officials of the Northern Steamship Company, we therefore, petition you as chief of the U. S. Marine-Hospital Service to appoint a legal board of inquiry with experts and attorneys to investigate the epidemic of typhoid fever on the *Northwest* in August, 1907, with power to subpena witnesses, to compel the Northern Steamship Company to produce its list of passengers and employés, to give in detail the various stopping places, locations at which drinking water was pumped, source of the milk supply, condition of the staterooms, cabins, quarters of the crews, plumbing, storage places for food, to ascertain if the boat was properly inspected by the United States officials and the officials of the steamer.

We also particularly urge that the health of each passenger and employé of the *Northwest* be ascertained by correspondence or direct inquiry so that an accurate list of patients and of fatalities may be compiled for your information.

We also request you to consider the advisability of a federal law compelling all steamers on the great lakes to serve distilled water to their passengers and employés.

---

TREASURY DEPARTMENT.

WASHINGTON, D. C., Nov. 20, 1907.

DR. ALLEN A. JONES, President, and DR. HARRY R. TRICK, Secretary, Buffalo Academy of Medicine, Buffalo, N. Y.

SIRS:—I beg leave to acknowledge receipt of your communication, in behalf of the Council of the Buffalo Academy of Medicine, transmitted to me by the Hon. D. S. Alexander and inclose herewith a copy of a letter this day addressed to him by myself which explains itself.

I desire, through you, to thank the council for the communication, which so forcibly sets forth the importance of this matter, and as stated in my letter to Mr. Alexander I am giving the matter most earnest administrative attention and hope to be able soon to inform you of the action taken.

Respectfully, WALTER WYMAN, Surgeon-General.

---

TREASURY DEPARTMENT.

Nov. 20, 1907.

HON. D. S. ALEXANDER, House of Representatives, Buffalo, N. Y.

MY DEAR SIR:—I beg leave to acknowledge receipt of your letter of November 12, received here on the 14th, enclosing a resolution passed by the Buffalo Academy of Medicine "respecting the increase of typhoid fever among passengers and employés sailing on the Great Lakes."

Recognizing the great importance of this subject, immediate attention was given by the Bureau to your former letter of October 4, and reports have been required of the medical officers located in the various ports on the Great Lakes. These reports are now being received, tabulated and summarized, to establish ground for radical action in the matter. The inquiry relates not only to statistics of the marine hospitals, but of the cities on the Great Lakes in which they are located.

I am writing to the council of the Buffalo Academy of Medicine, assuring them that the matter is now receiving administrative action, based on the valuable suggestions made by them and the medical officers who are submitting their reports.

Respectfully,

WALTER WYMAN, Surgeon-General.

---

BUFFALO ACADEMY OF MEDICINE.

BUFFALO, N. Y., Jan. 7, 1908.

DR. WALTER WYMAN, Surgeon-General, U. S. Public Health and Marine-Hospital Service, Washington, D. C.

SIR:—Allow me to express the thanks of the council of the Buffalo Academy of Medicine for your prompt and courteous reply to our recent communication regarding typhoid fever on the Great Lakes.

We desire to give this subject the greatest possible publicity, and I have been instructed to forward a set of these resolutions to the principal medical society in each port of call along the Great Lakes, and if agreeable to you, to publish these resolutions and our correspondence in THE JOURNAL of the American Medical Association.

May I ask if your investigation has yet developed anything that you consider worth reporting at our next meeting?

Again thanking you for your kindly cooperation, I remain,

Yours respectfully, HARRY R. TRICK.

---

TREASURY DEPARTMENT.

WASHINGTON, D. C., Jan. 27, 1908.

DR. HARRY R. TRICK, Secretary, Buffalo Academy of Medicine, Buffalo, N. Y.

DEAR DOCTOR:—I desire to acknowledge the receipt of your letter of the 7th instant, requesting information as to whether the investigation of typhoid fever on vessels engaged in interstate traffic has thus far been productive of definite results.

In reply, you are informed that this question has received attention in my annual report for the fiscal year 1907, which is now in the hands of the public printer. It is stated that, while the investigation has not as yet been completed, sufficient facts have already been established to demonstrate the necessity of Federal surveillance over these vessels engaged

in interstate traffic to prevent their disseminating this infectious disease. At the same time, the Bureau has received reports from its officers showing the probability of the same conditions prevailing to some extent on railway passenger trains engaged in interstate traffic.

It is shown that regulations can be made under the interstate section of the quarantine law of 1893 for the prevention of the spread of this disease from one state to another. There is, however, no penalty accompanying this section of the said law, and the addition of another section to the law has been recommended for penalties for violation of the regulations made thereunder. This matter is now receiving active attention.

In reply to the further statement contained in your letter as to the desirability of publishing the resolutions adopted by your society and the subsequent correspondence relating thereto, there appears to be no reason why this should not be done.

Respectfully, W. WYMAN, Surgeon-General.

---

**The Paralysis of the Skin in Grip.**—R. Hessen says in regard to the grip that it is a scourge wielded by Nature to punish people for their systematic maltreatment of their skin, for influenza deserves more than any affection the appellation of "skin disease." It paralyzes the skin and renders it incapable of functioning. The skin of a patient with influenza is unable to perform the slightest tasks imposed on it; it is unable to tolerate or adapt itself to the least change in temperature, and, if it works at all, it wavers between chilliness and profuse sweating. For these reasons every effort should be made to refrain from imposing work on the skin, and it should be kept enveloped in warm air, as is possible only in bed. In his article on the subject in the *Goldenes Buch der Gesundheit* he adds that there is another means to get rid of influenza if applied early in the game. Alcohol drives the blood to the skin, and consequently, when the typical pains in the sacral region and the tendency to sweat indicate that grip has seized the individual, if he is willing to drink brandy freely he will wake up the next morning with a "morning after" headache, but his grip will be gone.

**Cancer a Disease of Later Life.**—Many noted medical men are of the opinion that cancer is essential a disease of advancing years. Dr. G. Sims Woodhead, pathologist to Cambridge University, England, in connection with this aspect of the question when delivering a lecture recently said: "A gradually rising cancer mortality such as presents itself to every medical officer of health, must, apparently be considered in connection with the observation that cancer is a disease of advancing years, and that as the 'expected' length of life gradually increases, that is, as preventive medicine plays its part in prolonging life, we must for the present, at any rate, until we understand more about the etiology and treatment of this disease, expect to have some corresponding drawback in the form of a higher cancer death rate,—simply cancer is a disease of late life."

**Syphilis of the Lung.**—O. Jaime relates the history of a woman of 26 who had had hemoptysis twice and had coughed and expectorated for more than half a year. Her voice was clear, the general appearance good and temperature normal Auscultation revealed a softening lesion in the middle of the right lung, but no tubercle bacilli were found in the sputum, which was examined three times. Eight years previously the patient had taken a defective course of treatment for syphilis and mercurial treatment was at once instituted, with favorable results. In his communication on the subject in the *Revista de Med. y. Cir.*, September 25, Jaime warns against administering potassium iodid in such a case as it would favor local congestion and expose to danger of renewed hemoptysis. His experience has shown that an old syphilitic gumma in the lung may resemble in every respect a tuberculous process, undergoing cheesy transformation, finally becoming infiltrated with lime salts, and healing. He has observed cases of inherited syphilis in which the lesions in the bones had been assumed to be of a tuberculous nature, when a few injections of mercury would have cleared up the diagnosis and cured the lesions without the mutilating operations which have been undertaken.

## THE ABBOTT ALKALOIDAL COMPANY.

### Modern High Finance and Methods of Working the Medical Profession.

FOREWORD.

We have heretofore called attention to the wildness and unreliability of the claims made by the Abbott Alkaloidal Company for some of its products. This week we shall discuss some of the methods this company has adopted in building up and conducting its business. What follows, in brief, indicates:

That the president of the Abbott Alkaloidal Company has used, and is now using his position as a member of the medical profession as a commercial asset.

That the company is publishing what purports to be a medical journal devoted to the medical sciences and to the interests of medical practitioners, but which, to all intents and purposes, is a house organ devoted to the interests of the company and to the advertising of its products.

That the president and the vice-president of the company, though engaged in commercial lines, are members of medical societies and use this membership in medical meetings to advance the interests of their firm.

That the same officers, for the same reasons, flood the reading pages of medical journals with so-called original articles which are but thinly veiled advertisements.

That by glowing promises the company has induced physicians to become financially interested in its business and thus users and promoters of its products.

### The Abbott Alkaloidal Company and Its Journal.

The distinguishing feature of the company is the manufacture and advocacy of "alkaloids" or "active principles" (although many of its products are neither "alkaloids" nor "active principles," not a few being typical nostrums), their use being sometimes designated by it as "alkalometry." This system has been developed by it into a cult or sect, so that some of its advocates speak of "practicing alkalometry," or of themselves as being "alkaloidal physicians." Neither of the members of the firm is an active practitioner of medicine; at least, neither of them is recognized by other physicians in the neighborhood as being in very active practice.

To advance its interests the firm—or rather a related firm, the Clinic Publishing Company—publishes a journal, now called the *American Journal of Clinical Medicine*, and formerly known as the *Alkaloidal Clinic*, a name which, while less pretentious than its present one, is more indicative of its true character. In every department the fact stands out that, no matter what may be its assumed mission, its real *raison d'être* is the exploitation of the various products of the company. This is not surprising when it is found that the editorial staff is composed of those directly interested in the company. It would, indeed, be strange if, in such a journal, the therapeutics recommended were not tainted with commercialism.

Evidence of the commercial element is to be found in every department from the editorial pages to those devoted to "queries." In the latter department the freest rein is given to booming the company's products. "Nuclein" (Abbott) is advised in the medication of a case of "neglected syphilis;" "Cactin" (Abbott) is recommended in "cardiac hypertrophy," and "Sanguiferrin" (Abbott) may be indicated in a "marked case of malassimilation." "Carbenzol" (Abbott) and "Carbenzol Soap" (Abbott) are recommended in a skin eruption which a correspondent thinks may be "smallpox, Cuban itch or impetigo contagiosum"—and, incidentally, the precision of the therapy is equaled only by the accuracy of the diagnosis.

Not only do some of the products of the house appear to be indicated in practically every disease, but the advertising pages announce that there is a text-book of "Alkaloidal Therapeutics" by the president and vice-president of the company, as well as a book on practice—"Alkaloidal Practice;" there is also a "Guide to Alkaloidal Medication" by Dr. Shaller, who manages the "Little Mattie Mining Company," another of Dr. Abbott's investment schemes. Thus the company is equipped to furnish not only the theory, the principles and the practice, but also the drugs for their application—truly a veritable *multum in parvo* for the physician. The *American*

*Journal of Clinical Medicine* is the only periodical in the country, issued as a scientific medical journal, for which a regular subscription price is charged, whose real function appears to be to promote the sale and use of the products manufactured by its owners. Its only prototype was the *Medical Brief* in its earlier and palmier days.

### Commercializing Membership in Medical Societies.

No one will dispute that it is unbecoming to use one's professional relations and associations as a means of commercial aggrandizement. Making capital of religious connections, utilizing membership in a fraternal organization for commercial benefit, turning club affiliations into a financial asset—all such practices are justly held in the contempt they deserve. There devolves, too, on members of all learned professions an obligation, implied rather than expressed, to refrain from using the profession for commercial gain, and in the profession of medicine this principle constitutes one of its most hallowed traditions.

As physicians, Drs. Abbott and Waugh have attended society meetings; as pharmaceutical manufacturers they have utilized such meetings to give publicity to their products. This fact has usually been kept carefully in the background; at least, the promotion of their business, in most cases, has not been carried on openly. Medical societies have tolerated in Drs. Abbott and Waugh what they would not have tolerated for a moment in those who are frankly and openly commercial men. These two men, the president and vice-president, respectively, of this pharmaceutical concern and devoting practically their whole energies to it, who are not in active practice, in the accepted meaning of the term, have attended more medical society meetings within the past year than any other two physicians in the country. In many instances, not only one, but two, three and even four members of the firm have attended meetings. In one instance, that of an Illinois medical society meeting, Drs. Waugh, Abbott, Eppstein and Lanphear were present and openly advocated the use of an Abbott product, the three former being members of the company, the latter an attaché. It is remarkable that in only one instance did the members of a society recognize the true object for which these "invited guests" were present.[1]

We know of no reason why the president and the vice-president of the Abbott Alkaloidal Company should have had the courtesies in this regard extended to them simply because they are physicians, any more than the president of the Eusoma Chemical Company, of the Organic Chemical Company, or of the Reed & Carnrick Company, all of whom are physicians and some of them members of medical societies. Suppose these gentlemen should make a practice of attending medical society meetings and of taking part in discussions, improving every opportunity to extol their products, how long would it be before a justly indignant and outraged profession would inform such intruders that a medical society was not the place in which to secure gratuitous advertising?

### Commercializing Medical Literature.

#### DR. ABBOTT'S LITERARY FECUNDITY.

While the president of the Abbott Alkaloidal Company is not in active practice, he has been most liberal in giving the profession his experiences, for he has contributed more original articles to more medical journals than any other man in the country. He has not hesitated to enlighten our profession on all kinds of subjects, nor has he been particular regarding the journals he patronized—regular, homeopathic and eclectic, all were favored by him. We give below a partial list of the articles that appeared under his name during the year 1907. As there are many journals not received at this office, we have no means of knowing the sum total of his contributions to medical literature. The list does not include his articles that appeared in his own journal, nor his productions that were published as "reading notices" or in "publishers' departments," nor do they include communications in the "correspondence" departments, and there were many of these, for no opportunity for such advertising has been neglected.

LIST OF ORIGINAL ARTICLES BY DR. W. C. ABBOTT PUBLISHED IN 1907.

| TITLE OF ARTICLE. | PUBLICATION. |
|---|---|
| Why Drugs Are Neglected. | Woman's Med. Jour., January. |
| Solanin, A Useful Remedy in Epilepsy. | Merck's Archives, January. |
| Bronchiectasis. | Denver Med. Times, January. |
| Therapeutic Points. | Colo. Med. Jour., February. |
| Preventive Medicine. | Medical Bull., February. |
| Abnormal Perspiration, Drug Indications. | Toledo Med. and Surgical Reporter, March. |
| Scarlet Fever, Therapeutic Pointers. | Medical Times, March. |
| Importance of Vasomotors. | Jour. Ark. Med. Soc., March. |
| Tonsilitis. | Amer. Med. Compend, March. |
| Tonsillitis (different from preceding). | Illinois Med. Bull., April. |
| Pruritis Ani. | Dominion Med. Monthly, April. |
| Vomiting; Its Therapeutics. | Chicago Med. Times, April. |
| Asthma; Its Therapeutics. | Kansas City Med. Rec., April |
| Hyoscin Anesthesia. | Toledo Med. and Surgical Reporter, April. |
| Gallstone. | Lancet-Clinic, April 20. |
| Sunstroke. | Jour. So. Car. Med. Assn., April. |
| Exudations. | Wis. Med. Jour., April. |
| Roseola; Drug Applications. | Central States Med. Monitor, April. |
| Syphilis; Its Therapeutics. | Medical Bull., May. |
| Therapeutic Means for Relief of Spasm. | St. Louis Med. Review, May 18. |
| Cataract. | Amer. Med. Compend, June. |
| Diet and Common Sense in Treatment of Dropsies. | Diet. and Hyg. Gaz., June. |
| Treatment of Boils. | Amer. Med. Jour., June. |
| Mosquito Inhibition. | Texas Med. Jour., June. |
| Plea for the Average Doctor. | Chicago Med. Times, July. |
| Iodin. | Atlanta Jour.-Rec. of Med., July. |
| Phthisis—Drug Applications. | Vermont Med. Monthly, August. |
| Treatment of Typhoid Fever. | Carolina Med. Jour., September. |
| Hyoscin-Morphin Anesthesia. | Chicago Med. Rec., September. |
| Infection of Steno's Duct. | Columbus Med. Jour, September. |
| New Anesthetic and Forceps. | Medical Times, September. |
| Pleurisy—Drug Indications. | Dominion Med. Monthly, October. |
| Phlebitis—Drug Treatment. | Amer. Med. Jour., October. |
| What is a Dose? | Toledo Med. and Surg. Reporter, October. |
| Rheumatic Arthritis. | Denver Med. Times and Utah Med. Jour., October. |
| Remittent Fever — Therapeutic Suggestions. | Med. Bulletin, November. |
| Rheumatic Fever — Therapeutic Hints. | Amer. Med. Compend, November. |
| Urinary Ailments. | Texas Med. Jour., November. |
| Worms. | West Virginia Med. Jour., November. |
| Influenza. | Southern Med. and Surgery, November. |
| Amenorrhea Therapeutics. | Southern Clinic, November. |
| Puerperal Convulsions. | Cleveland Med. and Surg. Reporter, November. |
| The Therapeutics of Ozena. | Albright's Office Practitioner. December. |
| Scrofula: Its Therapeutics. | Medical Summary, December. |
| Rectal Affections: Some Therapeutic Suggestions. | Carolina Med. Jour., December. |
| Use of Opium in Preference to Its Derivatives. | Journal of Inebriety, December. |
| Modern Treatment of Pneumonia. | Kansas City Med. Record, December. |

These are original articles that have appeared in medical journals as the productions of one man during a single year; by a man who for years has been out of active practice and busily engaged in commercial lines![2]

1. This was at the meeting of the Kentucky Valley Medical Association last June, for which Dr. Waugh had secured an invitation to read a paper. Instead of the paper—an unwritten one, by the way—being a calm unprejudiced presentation of scientific fact, it proved to be but an exaggerated panegyric on the company's product, H-M-C (Abbott). Nor was this all; Dr. Abbott himself, though uninvited, was present to do what service was possible in the interest of the house. It happened that the physician who had been asked to open the discussion considered that he was present for the purpose of discussing a scientific question and not tacitly to aid in advancing the interest of a business firm. He questioned, therefore, the propriety of placing on a "scientific program the name of any such manufacturer's agent." Another speaker suggested that the American Medical Association button on the lapel of Dr. Waugh's coat was conspicuously out of place at that time. The result was a most interesting discussion, though one such as the gentlemen from Chicago had not expected. The full report of this meeting was published in the *Kentucky State Medical Journal* for October, 1907.

2. Besides being president of the Abbott Alkaloidal Company and the Clinic Publishing Company, Dr. Abbott is president of the Tengwall File and Ledger Company, now known as the Tengwall Company, and it is alleged, controls the business. Recent developments show that he was vice-president and the controlling spirit of the Ravenswood Exchange Bank. He was, if he is not now, actively interested in a certain silver mine in Colorado, and also in selling stock in this mine to physicans.

He has certainly established a record unapproached by any of the other great leaders of our profession. Is there any explanation of such unparalleled literary fecundity? Examination of the forty-eight articles listed above shows that at least two-thirds of them advocate the use of some product of his company. Is there any causal relation between these facts? Has any other pharmaceutical promoter been given the use of the reading pages of so many journals? How much has been saved to the Abbott Alkaloidal Company in advertising bills through the fortunate professional connections of its founder and president?

### WAUGH AND LANPHEAR ALSO.

Nor is this productiveness limited to the president of the company. While we have not attempted to compile statistics on the subject, a cursory glance at the journals which come to this office leads us to judge that the number of veiled advertising articles published by the vice-president of the company—Dr. Waugh—who also is not regarded as being in very active practice—does not fall far behind that of the president. The same might be said of the articles written by another attaché of the company, Dr. Emory Lanphear, whose many effusions during the past year were chiefly devoted to exploiting the firm's "new" proprietary anesthetic.

### OTHER WRITERS FOR THE COMPANY.

There are some lesser stars who deserve mention, one of them being Dr. W. T. Marrs of Peoria Heights, Ill., a physician who is afflicted with the testimonial habit. Up to September, 1907, Dr. Marrs distributed his literary contributions somewhat indiscriminately, having written testimonials of the "original article" type for the following products: Antikamnia, Bromidia, Neurilla, Thigenol, Ethol, Chionia, Arsenauro, Kennedy's Pinus Canadensis, Peacock's Bromids, Veronal, Phenoseptine, Cactina Pillets and Papine! In the fall of 1907 Dr. Marrs evidently experienced a change of heart as since September of that year he has with commendable regularity written of the virtues of the Abbott preparations, especially recommending in his series of articles Saline Laxative (Abbott), W-A Intestinal Antiseptic, Calcalith, Calcidin, Neurolecithin, Salithia, and H-M-C (Abbott), to say nothing of write-ups on the use of alkaloids in general.

Another light in the Abbott firmament is Dr. R. J. Smith of Schenectady, N. Y., to whom President Abbott refers as an "enthusiastic follower of *Clinic* teachings" and one whose "enthusiasm is not the unhealthy product of the fanatic." To this last statement one is willing to subscribe after reading a few of Dr. Smith's literary gems; there seems to be nothing fanatical about the matter—nothing is to be read between the lines. Dr. Smith is partial to Calcidin (Abbott), Hemorrhoidal Astringent (Abbott), W-A Intestinal Antiseptic (Abbott), H-M-C (Abbott), Bulkley's Uterine Tonic (Abbott), Anticonstipation Granules (Abbott), Saline Laxative (Abbott), Dolor-pyrine and Glycero-magnesium Suppositories (Abbott). Dr. Abbott says: "Dr. Smith is not afraid to pass the good word along." Evidently not!

As illustrating the close telepathic relationship that exists between the various members of the alkaloidal cult the following is of interest: In different medical journals, separated geographically by half the width of the continent, there appeared, almost simultaneously, three articles under the common caption: "Query—What Pharmacopeial Preparations Should be Kept on Hand by the General Practitioner?" Each article was by a different author. This in itself would have been a coincidence sufficiently startling to have warranted investigation by the Society for Psychical Research. On reading these articles, however, one was struck with the fact that all three men recommended alkaloids, and in two cases Abbott's alkaloids in particular. Still further research disclosed the fact that the authors were our old friends Smith and Marrs and a Dr. James Burke of Manitowoc, Wis. This latter gentleman is known as another versatile writer on the subject of alkaloids in general and Abbott's products in particular. The coincidence thus vanishes and we have instead the very prosaic fact that the Abbott Alkaloidal Company "presses the button" and certain individuals "do the rest."

Two other men, whose connection with the company is not generally known, are Drs. G. H. Candler and E. G. Paxton, both of whom are reported to be on the staff of the company at Ravenswood. Neither is, or was two months ago, a licensed practitioner of the state in which he lives, and neither, therefore, is engaged—at least, legally—in the practice of medicine. Yet the articles by these individuals appear in various medical journals from time to time, giving advice to active practitioners in the management of their patients. And the reader is not informed that they are connected with the company. The average reader, of course, unless he takes a large number of journals, is unable to see the relationship between these various "original" papers and is led to believe, as is intended, that such recommendations of the products are spontaneous and unsolicited.

The fact remains that each month during the past year a flood of pseudo-scientific articles—written by those directly or indirectly connected with the company and in the interests of its products—has appeared in the various medical journals of the United States, which were as clearly advertising matter as though printed on the cover with display heads. We believe we are not exaggerating when we say that the Abbott Alkaloidal Company secured more of this kind of advertising during the year 1907 than all the other pharmaceutical and proprietary medicine houses in the country put together. We are not referring to the occasional contributor in active practice, who gives his actual experience or honest opinion, but to the class of writers described above.

Whether the fact that the Abbott Alkaloidal Company spends thousands of dollars in advertising its products in the various journals that carry these "original article" testimonials has any bearing on this matter we do not know. Candidly we believe not but rather that the majority of editors of medical journals have not appreciated how they are being "worked" by this company.

### The Profit-Sharing Method.

The plan by which pharmaceutical firms are attempting to secure the cooperation of physicians through profit-sharing, to which we have referred on two previous occasions, is double-acting: The doctor supplies money to help run the business and at the same time—and this is more important—lends his patronage and cooperation in creating a market for the products. Nothing will so successfully secure one's support and cooperation in promoting a project, or product, as having a financial interest therein. This is an axiom in business affairs. A physician would be more than human if he resisted the temptation to favor the products of the firm in which he was interested or to say a good word for that firm if necessary. This profit-sharing scheme is another of the methods used by the Abbott Alkaloidal Company to secure the patronage of physicians.

With most extravagant and optimistic promises not only as to their safety, but also as to the profits connected with the proposition, this company for over two years has been offering to physicians what it calls "Guaranteed Participating Cooperative Bonds." As presented in their advertising literature, the investment is most attractive, as the following quotations will show:

> "Every dollar put into each series will earn and receive exactly what my (our) dollar earns and receives in the same series for they go in exactly on the same basis—a genuine, unqualified, participating cooperation. We pay you 6 per cent., we take 6 per cent., and then divide the remainder evenly with you, dollar for dollar—a normally probable average, *if we pull together*, [Italics not in original.—Ed.] of 10 per cent. or more during each five-year period and your money refunded at the end of each five years, or on thirty days' notice, at any time, if you need it. Doctor, this is as sure as the sun, as safe or safer than a bank and a money-maker according to the work we all put in. We're 'rustling' as usual. Will you help?"
>
> "These bonds, in five-year series, are guaranteed both as to safety of principal and interest at 6 per cent. . . .
>
> "These bonds are not only guaranteed as above, but each series is *participating* during its five-year period, every dollar of your investment sharing in the profits

of the period exactly on the same percentage basis as our own investment. . . .

"We take all the risk and admit you on an even percentage basis with ourselves. What better do you want? What safer insurance could you have? What more could you ask for? Do you want it? . . .

To those who were using the company's products or who had confidence in the firm, the temptation to invest certainly has been great. According to the advertisements, these "bonds" have all the advantages of absolute security and safety that attaches to guaranteed bonds, both as to principal and interest, and in addition the speculative possibilities that lie in ordinary stocks. An ideal investment, certainly, and one in which many physicians may have invested, not thinking of the ethical side of the question. How many, of course, we do not know. We have been informed that one of the officers of the company stated last fall that there had been over $125,000.00 worth of these "bonds" sold. In any event, there appeared in the Chicago *Tribune* of Feb. 12, 1908, and in other papers at about the same time, a statement by Mr. Cleveland, chairman of the depositors' committee of the Ravenswood Exchange Bank (of which more later), to the effect that the company

"owed among other items $100,000.00 on personal notes of $100 or thereabouts, held by 1,000 physicians throughout the country."

Suppose there are only 1,000 physicians who invested, what does it mean? A prominent physician wrote last fall:

"Dr. Abbott told me while at Atlantic City that the bond proposition he was offering the profession was **the greatest cooperative scheme ever offered, that it made an agent of every doctor who purchased a bond.**"

Undoubtedly this is a correct statement of fact. As bearing on this idea, read this:

> "Do you want to make an investment that is safe and that *you can help to grow?* If so, use the application blank as indicated, agree thereon to do exactly what you can and will do—*do your part* and we'll do ours." [The italics are ours.]

Very suggestive, certainly. *You* can help to make the business grow. And what will the harvest be? Read the answer in this quotation:

> "And the result? Let 1,000, 5,000, 10,000 earnest, honest doctors *pull together*, day by day, month by month and year by year *for the common good* and the result will answer the question." [Italics ours.]

There can be no misunderstanding as to what is meant. "Pull together for the common good." How? By giving the Abbott Alkaloidal Company your money to put into its business and by prescribing and pushing its products. Grand scheme—for the Abbott Alkaloidal Company.

### THE "BONDS" ARE NOT BONDS.

There is another and more practical aspect to all these profit-sharing schemes than that of morals or ethics: Will it pay? Is the stock a good investment? Are the bonds safe, or are the people offering them telling all the facts? This is a business proposition. How many physicians looked into this particular "bond" business to see what they were buying? How many examined the so-called "bond" to learn what was the "guarantee" that was so prominent in the advertising literature, what security was back of it? We submitted one of the bonds to our attorney, who on October 9, rendered the following opinion:

From such examinations, and assuming that the blank spaces for name and sums and signature are duly filled out, *we are of the opinion that the so-called bond would not in fact be a bond guaranteed as that term is understood by investors.*

1. The bond is not negotiable. It is expressly made non-transferable, hence it lacks one of the prime requisites of an investment bond. In other words, it is not a bond which can be sold or pledged as other corporation bonds can be, and would therefore be of no market value.

2. A bond issued by a private corporation, to be of any value as a marketable bond, as the word "bond" is usually understood, should be secured on real or personal property of adequate value. This bond does not purport to be secured in any such manner. *It is of no greater value than a simple unsecured promissory note for an equal amount.*

3. It is designated as a "guaranteed 6 per cent. coperative bond," but it is evident that the term "guaranteed" as so used is calculated to mislead, for there is no guarantor named. As the term "guaranteed" is ordinarily used as to bonds and negotiable instruments, it means that some person or corporation of greater financial ability than the maker of the bond guarantees the payment of the interest and principal at maturity. There is here no such guarantor. The word "guaranteed" by the maker of a bond adds nothing whatever to the simple promise to pay interest.

4. Apparently the term "guaranteed" as used in the so-called bond means that the Abbott Alkaloidal Company, if solvent and able to pay when interest matures, will pay interest at 6 per cent. per annum quarterly in cash, but if the Abbott Company should fail there is no one else who can be called on to pay the interest in default.

5. The coupons attached to the bond and designated "Special Annual Cooperative Profit-sharing Dividend Coupon" will entitle the holder to a "special profit-sharing dividend" as soon after Oct. 1, 1905 and 1906, as the annual account has been completed to determine the amount of such dividends and the same has been declared and fixed by the board of directors.

The account may show losses instead of profits, and it may never be completed so as to determine the dividend, or such dividend may never be declared and fixed by the board of directors. Therefore the so-called coupon is of no present value.

Thus, these "bonds" are simply unsecured notes, nothing more. If the company prospers, they will be paid. Really, they are not as good as ordinary notes, for notes can be sold or transferred; these "bonds" can not. So far as we can learn there seems to be no limit to the number that may be issued, so that the amount of "security" behind each "bond" is exceedingly uncertain.

It is possible that the statements in the advertising literature, some of which we have quoted above, regarding the safety of these "bonds" were honestly made; that the company intended to carry out the proposition and fulfill its promises in every particular—if it could. But is it giving physicians "a square deal" (to use the term so constantly employed by the company) to call these unsecured notes "guaranteed profit-sharing bonds" to convey the impression that they are absolutely safe? Was it honest for Dr. Abbott to make definite, positive promises which he or his company might not be able to carry out?

### "DOCTORS FOR DOCTORS, AND FOR EVERYBODY A SQUARE DEAL."

The above is the title of a circular signed "Dr. W. C. Abbott," sent out last October. It is illustrated with pictures of the plant, including the one in course of erection. There is also an application blank for the "Guaranteed Cooperative Profit-Sharing Bonds (series three)." It is a most "fetching" advertisement of the "bonds." The last sentence, which stands out by itself, is:

"Our interests are mutual, push 'em along."

It contains such sentences as these: "A provision for 'the rainy day' that will beat the bank—positive safety, honorable treatment, a square deal—genuine reciprocity." And there stands out in heavy black letters

**"And every dollar goes into buildings and equipment, increasing your already ample security."**

The sentence just quoted can be read in only one way, and that is that the money received for the "bonds" is to go into buildings and betterments.

### ABBOTT TRANSFERS PROPERTY TO OWN ACCOUNT.

Now, what about the property in which it is alleged so much money has been placed? What about the building into which the money from these bonds was to go? And what about the "security" back of the bonds? The pictures in the recent circulars advertising the "bonds" show three buildings—one in course of construction. These buildings are on land in Ravenswood that has a frontage of approximately 238 feet, with a depth of 163 feet. When the "bonds" were first issued, Oct. 1, 1905, the records show that all this property—the 238 feet—was in the name of the Abbott Alkaloidal Company. But the records also show what the advertisements do not show, viz., that on May 10, 1906, 168 of the 238 feet frontage was transferred by the Abbott Alkaloidal Company to W. C. Abbott, the deed being signed by Wallace C. Abbott, its president, and Louis P. Scoville, its secretary, and to-day, March 4, 1908, it is still in his name. The records also show that a mortgage of $30,000.00 was put on the property after it was transferred to Dr. Abbott, and that this mortgage is at present unsatisfied. On this property, now in Dr. Abbott's own name, there is a four-story modern building, completed about a year ago, and also a frame building. The four-story building is occu-

pied by the Clinic Publishing Company and its printing plant, and by the Tengwall File and Ledger Company, corporations in which Dr. Abbott is said to be the principal stockholder.

It will be noted, therefore, that, according to the official records, all the property that is described in the advertisements and illustrated in the circulars is not now in the name of the Abbott Alkaloidal Company, but that the greater portion of it is in the name of Dr. Abbott himself.

PROPERTY IN NAME OF ABBOTT ALKALOIDAL COMPANY.

The records show 70 feet of the 238 still in the name of the Abbott Alkaloidal Company. On this land is a building in course of construction. The records also show that in December, 1907, a claim for a mechanic's lien was filed by a building company for $31,000.00 still due it under its contract with the Abbott Alkaloidal Company. This building, it is said, is to cost, when completed, between $75,000.00 and $80,000.00. If there are no outstanding claims against this building, other than the mechanic's lien above mentioned, then we can estimate that there has been paid on it not to exceed $50,000.00—the amount is probably much less. So far as we can learn through the records this is the only real estate and buildings owned by the Abbott Alkaloidal Company.

WERE THE BONDHOLDERS CONSULTED?

The first series of "bonds" bear the date of Oct. 1, 1905. It was six months after this that the transfer of the property was made. Can Dr. Abbott claim that he is giving physicians a "square deal" when after these "bonds" were issued he had the larger part of the real estate of the company, which gave the "bonds," transferred to his personal ownership, thus taking away from the company the most staple of its assets? Can Dr. Abbott explain to physicians who trusted him—who bought "bonds"—his idea of a "square deal" to doctors? Does this come under his classification of "Doctors for doctors," or is it more appropriately classified as "Dr. Abbott for Dr. Abbott?" If it was so easy for him to have that asset transferred to himself, would it not be equally easy to transfer all the assets of the company, and if so, what "security" will be left for the bondholders? In this "square deal" where he has the control of everything, and the best part of the real estate has been transferred to him, who is the guarantor of the "bonds"? Does Dr. Abbott make any personal guarantee? Oh, no. The only place in which we have seen such a guarantee is in the advertisements. It is the Abbott Alkaloidal Company that promises to pay, and no one else stands behind that promise if the company should fail to meet its obligations.

Undoubtedly Dr. Abbott, with his monumental assurance, would reply that he himself will guarantee the "bonds" issued by the Abbott Alkaloidal Company, that he will make good the promises, and that it does not matter in whose name the property is held. This is all very good so far as it goes, but verbal promises have little weight in a court of law. To be of any legal value they must be in due form and signed by the individual making them.

FAILURE OF THE RAVENSWOOD EXCHANGE BANK.

Of direct interest relative to this bond proposition is the following: On Nov. 12, 1907, the Ravenswood Exchange Bank failed, owing its depositors over $400,000.00. The chief officers of this bank proved to be: President, L. P. Scoville (secretary of the Abbott Alkaloidal Company); vice-president, Wallace C. Abbott (president of the Abbott Alkaloidal Company); W. F. Waugh (vice-president of the Abbott Alkaloidal Company), was a director; in other words, the bank proved to be an Abbott Alkaloidal Company bank, and appears to have been run by the officers of that company. Dr. Abbott has been referred to in the newspapers as the leading spirit of the institution. It later developed that the bank was not incorporated, but was simply a partnership concern. It is now in the hands of a receiver.

According to the report of the depositor's committee, made December 5, "Dr. Abbott and his institutions" owed the bank $81,000.00, and as endorser or guarantor Dr. Abbott's "fixed and contingent liabilities aggregate approximately $101,000.00" (including the $81,000.00). Besides this, Scoville, the secretary of the Abbott Alkaloidal Company and the president of the bank owed the bank $7,500.00, and Dr. Waugh, also connected with both institutions, was indebted to it to the extent of $1,500.00. As against this the Abbott Alkaloidal Company had on deposit some $14,600.00.

According to statements made by Mr. Cleveland, chairman of the depositors' committee, in the Chicago *Tribune* for February 12, the Abbott Company, "owed among other items, $100,000.00 on personal notes of $100 or thereabouts, held by 1,000 physicians throughout the country." The notes here referred to are the so-called "guaranteed participating cooperative bonds".

On the first of March, according to reports, the amount of indebtedness of Dr. Abbott and the Abbott Alkaloidal Company had been reduced to between $65,000.00 and $70,000.00.

STOCK NOW OFFERED TO PHYSICIANS.

Were it not for what follows we should not have referred to this bank business. It will be remembered that the bank failed November 12; that Dr. Abbott knew the bank's financial condition and its relation to him and to his company, as well as the condition of this company at the time the following letters were sent out. Bearing this in mind, the proposition contained in these letters is astounding. The first was typewritten and evidently a personal letter, and was forwarded to us by the person to whom it was sent.

ST. LOUIS, Jan. 14, 1908.

Dr. ————.

*Dear Dr.:*—I know you have some money to invest and so write you to say that if you so desire I can secure a block of preferred stock of the Abbott Alkaloidal Company of Chicago. This stock is limited to $500,000. *Last year it paid 9 per cent. interest; and there was a net profit of $110,000* to put into new buildings, etc. While this stock is *guaranteed* to pay only 7 per cent. per annum I feel so sure it will pay the best of any safe investment in this country that I am putting every dollar I can spare into it. If you want some let me know immediately about how much and I will arrange the matter for you. Very truly yours,

EMORY LANPHEAR.

The following is from a circular gotten up to imitate a typewritten letter, the name and date being inserted with a typewriter:

ST. LOUIS, MO., Feb. 5, 1908.

*My dear Dr.:*—I have a quiet tip for you: The Abbott Alkaloidal Company of Chicago (a close corporation, owned very largely by Dr. Abbott, its founder and manager), is incorporated wholly and is operated solely "by doctors for doctors," among whom are some of the largest users of alkaloidal granules and tablets in the world. They have put a very large amount of money into their present plant and equipment, and are realizing annually large profits from their investment. But by reason of the enormous outlay of money in constructing and equipping new buildings (which when completed will be among the finest in the world devoted to this kind of business) and to afford an amount of capital adequate to their unprecedented growth, they are now reincorporating on a basis that will permit them to sell a limited amount of 7 per cent. preferred-participating stock to other doctors who desire a safe and profitable place for their savings.

This "preferred" stock, and its dividends, is preferred as to all of the profits and assets of the company; it is likewise participating in excess profits and always paying 1 per cent. better than the "common," all of which, with the responsibility, is held by Dr. Abbott and his immediate associates; so, by investing at this time you will have not only safety (it's the best thing I know) but the certainty of a large profit on your investment.

There is nothing speculative about this stock. Personally I have gone the limit, taking $1,000 worth, 10 shares, at par. On an earning basis it is now well worth 110 to 125. I would gladly take more, but Dr. Abbott has "stuck the stake" here and his "stakes" don't pull up. While at this time the demand for The Abbott Alkaloidal Company's products, for want of room and working capital actually exceeds their ability to supply it, the great work long done by Dr. Abbott and his associates is only just *beginning* to produce the golden harvest that will result. The NET profits of the company for the past year (this, as well as the fact of this stock offering is *strictly confidential—absolutely so!*) were well in excess of ONE HUNDRED THOUSAND DOLLARS. With more capital this can be largely increased pro rata in a few months, and the possibilities of the future are beyond computation.

As it is proposed to sell only $200,000 of this preferred stock, your early attention to this letter is advised. If you are interested in the proposition let me know at once, say to what extent, and on my request to Dr. Abbott, who privileges me privately as above, subscription blanks will be sent you from Chicago. Subscriptions are payable either in full or one-half down and one-half in sixty days, certificates to be issued when final payment is made. It would be my advice to accept the latter proposition as it will perhaps enable you to take a little more than you would be able to carry on the other plan. Very cordially yours,

EMORY LANPHEAR.

It will be noticed that the letter and circular do not agree. According to the circular, the net profits were well in excess of one hundred thousand dollars, whereas the letter says: "Last year it paid 9 per cent. interest; and there was a net profit of

$110,000 to put into new buildings, etc." Was it an omission in leaving out the 9 per cent. dividend in one, or was it a typographical error in putting it in the other?

It will be observed that the preferred stock is to be limited to the very modest amount of $500,000.00; but so far as we have been able to learn there is no limit placed on the "Guaranteed, Participating, Cooperative Bonds," unless it be the capacity of the printing press to turn them out and the number of foolish doctors to take them in. In this regard the preferred stock will have an advantage.

The important point overshadowing all others is that in spite of the fact, as revealed by the failure, that Dr. Abbott and his company were most seriously in debt, in spite of the fact that the physicians of the country had already contributed a very large sum—$100,000.00 to $125,000.00, possibly more—by investing in the bonds of the company, in spite of the fact that the greater part of the property of the Abbott Alkaloidal Company had been transferred, in spite of all this, an attaché of the company, evidently with the consent, and at the instigation, of its president, Dr. Abbott, now appeals to physicians to invest in the stock of the company, setting forth as an inducement that this stock is "the best of any safe investment in the country." Is comment on this necessary?

### THE PROFITS COME FROM THE DOCTOR.

During the past eighteen months—it may be the revenue from the sale of "bonds" to doctors making it possible—the Abbott Alkaloidal Company has been advertising in medical and drug journals in a most extensive manner, its advertising being in excess of any other pharmaceutical firm. As a result of this advertising campaign its business has been increasing, and with this increase in business has naturally come enlarged profits. Dr. Abbott recently has stated that if he were given time he could liquidate his indebtedness from the profits of the Alkaloidal Company. And here it should be explained that Dr. Abbott's business enterprises ramify in directions other than his business with the medical profession. Which of these enterprises is responsible for his present financial condition and that of his Alkaloidal Company we do not know. It seems, however, that while the losses are not chargeable to his medical business, yet his business with the doctors is expected to recoup all.

### THE ETHICAL ASPECT.

We have enlarged on the financial aspect of this "bond" business, but the main thought must not be lost sight of. After all, the ethical, the professional, side of this wretched profit-sharing business is of more importance. It is not a question of whether or not these "bonds" will ever be paid, or whether there will be much, little or no profits to the individual investor. The demoralizing, the degrading influence of this profit-sharing in the manufacture and sale of medicines by physicians is more important than any financial loss. If he would stop to think, no physician who has due regard for his duty to the public would place himself in a position in which his own financial interests might warp his judgment as to what is best for those who place themselves in his hands. Dollars are like butterflies that flit from flower to flower, but self-respect, that attribute which stamps man a man, is to him as the scent is to the rose. The butterflies may come and go, but the odor of the rose remains. The main question, therefore, is not whether the dollar which has been invested in these bonds or in this stock will return with others, but whether with the departure of that dollar goes one's self-respect.

Most of the above matter was practically ready and would have appeared last November or December had not the bank failure occurred. It was then laid aside, as we felt unwilling to add to the difficulties of the company or its president. Recent developments, however, have made it unnecessary to withhold longer the facts we present regarding the various and peculiar methods of the company. Since part of these methods involve the advancement of money by physicians, it seems only just and fair that the medical profession should be informed regarding the financial affairs. The facts are known locally, since they have been published in the local press, but they are not known to the doctors of the country, who, under the circumstances, are the ones vitally interested.

Why do we devote so much space to this concern? What is the motive? The same that has prompted us to expose fraud in connection with the nostrum business; that has led us to enlighten the medical profession regarding the various ways in which it is being exploited; and that has caused us to give publicity to facts which physicians ought to know, and which they can not know unless they are enlightened by the journals that represent them. THE JOURNAL is performing the function of one representing a profession; that is, it is enlightening the members of the profession it represents regarding matters of vital interest to the individual and to the profession as a whole.

---

## Book Notices

HOSPITAL TRAINING-SCHOOL METHODS AND THE HEAD NURSE. By Charlotte A. Aikens, Associate Editor of the *National Hospital Record*. Cloth. Pp. 260. Price, $1.50. Philadelphia: W. B. Saunders Co., 1907.

This book should be of value to head nurses, especially to those filling such positions for the first time. An excellent outline is given of the curriculum for a course in nursing and all points in hospital management are dealt with.

PRIMARY NURSING TECHNIC for First-Year Pupil Nurses. By Isabel McIsaac, Graduate of the Illinois Training School for Nurses; Formerly Superintendent of the Illinois Training School for Nurses; Honorary Member of the British Matron's Council, Etc. Cloth. Pp. 197. Price, $1.25 net. New York: The MacMillan Company, 1907. All Rights Reserved.

Miss McIsaac's long experience as superintendent of the Illinois Training School for Nurses makes this work of unusual interest. While the book will not take the place of the better known text-books of nursing, it should prove a valuable addition to the pupil nurse's library. The language is simple and the subjects are dealt with in a practical manner.

SURGICAL APPLIED ANATOMY. By Sir Frederick Treves, Bart, G.C.V.O., C.B., LL.D., F.R.C.S., Consulting Surgeon to the London Hospital. Fifth Edition. Revised by Arthur Keith, M.D., F.R.C.S., Examiner in Anatomy, Royal College of Surgeons, England and University of Leeds. Cloth. Pp. 640, with 107 Illustrations. Price, $2.25. Philadelphia: Lea Brothers & Co., 1907.

Since the first edition, in 1883, of this little pamphlet, familiar to all students of anatomy and surgery, the field of surgery has been vastly enlarged. The successive editions of this manual have grown in proportion. The present edition, revised by Arthur Keith, contains 622 pages, each full of valuable and practical information regarding the anatomy of the body. The book has been carefully revised throughout and much new matter added. It is better printed than the earlier editions and the illustrations are more numerous.

OPHTHALMIA NEONATORUM. By Sydney Stephenson, M.B., C.M., Ophthalmic surgeon to Queen Charlotte's Hospital, London. Cloth. Pp. 258. London: George Pulman & Sons, Ltd., 1907.

This is the Middlemore prize essay given by the British Medical Association during the past year and is the most complete monograph on the subject in any language. Destructive ophthalmia of the newborn can not be too often or too thoroughly considered, either from the medical or lay standpoint. When one remembers that about one-third of all blind people owe their misfortune to early ophthalmia and that the disease is, in the great majority of instances, preventable, these facts stand as an arraignment of our profession and indicate a neglected duty which it is incumbent on us to perform. In such a crusade Mr. Stephenson's admirable work will be of great assistance. He proceeds in seven chapters, devoted to the etiology, symptoms, diagnosis, prognosis, prevention and treatment of infection, to discuss the matter extensively. The practical surgeon will perhaps be most interested in the section beginning with page 158 and headed "Prevention." In this chapter are discussed the relative merits of the various preventatives of the ocular infection:—silver nitrate (in all percentages), silver citrate, argentamin, protargol, argyrol, formalin, alcohol, boric acid, corrosive sublimate—1-4000, etc. In his

summary Stephenson shows that the 1 per cent. solution of nitrate of silver and mercuric chlorid 1-4000 have been most proficient in preventing ophthalmia, as they are free from anything approaching serious irritation, and, he adds, "these harmless remedies should be applied to the eyes of every baby born in a public institution, whether it be a maternity hospital or a poor lying-in department."

As is well known, this subject is now being extensively discussed and agitated in this country, especially by a committee of the American Medical Association under the chairmanship of F. Park Lewis, but it would be well to repeat with Mr. Stephenson what he has properly termed "the principal supplemental measures:" the obligatory notification of the disease; the instruction of medical students and of midwives in the disease; the education of the public as to the dangers of ophthalmia in babies; the appointment of an ophthalmic surgeon on the staff of every maternity hospital; the keeping and, if possible, the periodical publication, of records with regard to ophthalmia in all public institutions; the gratuitous distribution of an efficient solution for prophylaxis.

A decided distinction is very properly made between nongonococcal ophthalmia and the severer form. It ought to be remembered that the latter almost invariably declares itself on the third day after birth and is, without exception, accompanied by swollen lids, and a more or less purulent discharge. Surely these three symptoms are easy enough to remember. In the prognosis of ophthalmia neonatorum one should bear in mind quite as much the condition of the baby's nutrition as of the virulence of the local disease. Disturbances of the nursing mother's health may also exert a prejudicial influence on the outcome of the infant's ophthalmia. This book is replete with cited cases, contains a complete list of the literature and has a useful and satisfactory index. Inasmuch as a volume of this description appeals quite as much to the obstetrician as it does to the ophthalmologist it should have a wide sale among all classes of medical men.

# The Public Service

## Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 7, 1908:

Banta, W. P., asst.-surgeon, advanced to the rank of captain, Feb. 18, 1908.

Van Dusen, J. W., asst.-surgeon, now on leave of absence at Norwalk, Ohio, will proceed on or before the expiration of said leave, to Ft. Crook, Neb., for duty.

Scott, G. H., asst.-surgeon, relieved from further duty at Ft. Duchesne, Utah, and assigned to permanent station at Ft. Logan, Colo.

Mabee, J. I., asst.-surg., ordered to report in person on Tuesday, March 24, 1908, to Lieut.-Col. Geo. H. Torney, deputy surgeon-general, president of examining board, Presidio of San Francisco, for examination to determine his fitness for advancement.

Birmingham, H. P., surgeon, now on duty as medical inspector Army of Cuban Pacification, will report in person to the commanding general of that Army for duty as chief surgeon, relieving Lieut.-Col. Blair D. Taylor, deputy surgeon general.

Taylor, B. D., deputy surgeon-general, relieved from further station at the Army and Navy General Hospital, Hot Springs, Ark., and on his relief from duty as chief surgeon, Army of Cuban Pacification, will proceed to Atlanta, Ga., and report to the commanding general, Department of the Gulf, for duty as chief surgeon of that department.

LeGarde, L. A., deputy surgeon general, on arrival in the United States will proceed to Denver, and report in person to the commanding general, Department of Colorado, for duty as chief surgeon of that department.

Dickenson, C. F., contract surgeon, ordered from the Presidio of San Francisco, to Fort Barry, Cal., for duty.

Tignor, E. P., dental surgeon, relieved from duty at Ft. DuPont, Del., about April 10, and ordered to Ft. Schuyler, N. Y., for duty.

Gunckel, G. I., dental surgeon, left Ft. Oglethorpe, Ga., and arrived at Jackson Barracks, La., for duty.

Hussey, S. W., dental surgeon, left Ft. Lincoln, N. D., and arrived at Ft. Yellowstone, Wyo., for duty.

Craig, E. J., dental surgeon, ordered from Ft. Mackenzie, Wyo., to Ft. Robinson, Neb., for duty; granted leave of absence for ten days.

## Navy Changes.

Changes in the Medical Corps of the Navy for the week ending March 7, 1908:

Hull, H. F., P. A. surgeon, commissioned P. A. surgeon from April 12, 1907.

Wheeler, L. H., P. A. surgeon, commissioned P. A. surgeon, from April 22, 1908.

Gardner, J. E., medical inspector, ordered to the Marine Recruiting station, Boston.

Thompson, J. C., surgeon, ordered to report at Washington, D. C., to the secretary of war, for special duty.

McDonell, W. N., P. A. surgeon, detached from the Naval Recruiting Station, Chicago, and ordered to the *Hancock*.

## Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 4, 1908:

Foster, M. H., P. A. surgeon, leave of absence granted for 2 months and 11 days, from Oct. 9, 1907, amended to read 2 months and 9 days:

Earle, B. H., P. A. surgeon, granted leave of absence for 5 days, from March 2, 1908:

Scofield, R. B., asst.-surgeon, granted leave of absence for 3 days, from Feb. 23, 1908, under Paragraph 191, Service Regulations.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for 5 days, from Feb. 26, 1908.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 6, 1908:

SMALLPOX—UNITED STATES.

Arizona: Bisbee, Jan. 26-Feb. 10, 5 cases.
California: Los Angeles, Feb. 1-15, 16 cases.
District of Columbia: Washington, Feb. 8-22, 26 cases.
Illinois: Chicago, Feb. 8-15, 5 cases; Danville, Feb. 16-23, 1 case; Springfield, Feb. 15-20, 12 cases.
Indiana: Elkhart, Feb. 15-22, 5 cases; Indianapolis, Feb. 9-23, 4 cases; La Fayette, Feb. 10-24, 2 cases; Muncie, Feb. 8-22, 2 cases.
Kansas: Kansas City, Feb. 15-22, 12 cases; Topeka, Feb. 8-15, 1 case; Wichita, 7 cases.
Kentucky: Covington, Feb. 8-15, 2 cases; Georgetown, Feb. 21, 5 cases; Lexington, Feb. 8-22, 2 cases.
Louisiana: New Orleans, Feb. 8-22, 22 cases (19 imported).
Maryland: Baltimore, Feb. 15-22, 2 cases.
Massachusetts: Melrose, Feb. 8-15, 3 cases.
Michigan: Saginaw, Feb. 8-15, 6 cases.
Minnesota: Winona, Feb. 8-22, 3 cases.
Missouri: Kansas City, Jan. 24-Feb. 14, 25 cases, 2 deaths.
Montana: Butte, Feb. 4-18, 3 cases.
North Carolina: Charlotte, Feb. 8-15, 3 cases.
North Dakota: Fessenden, Feb. 22, 3 cases.
Ohio: Cincinnati, Feb. 14-21, 14 cases; Dayton, Feb. 8-15, 1 case.
Pennsylvania: Marion, Jan. 20, 1 case; Pittsburg, Feb. 8-15, 1 case.
Tennessee: Knoxville, Feb. 15-22, 4 cases; Memphis, Dec. 21-Feb. 8, 10 cases; Nashville, Feb. 15-22, 5 cases.
Virginia: King Williams County, Feb. 18, 2 cases; Richmond, Feb. 8-15, 5 cases.
Washington: Spokane, Feb. 8-15, 16 cases; Tacoma, 1 case.
Wisconsin: La Crosse, Feb. 8-22, 15 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Dec. 28-Feb. 1, 113 cases, 1 death; Para, Jan. 18-Feb. 1, 8 cases, 3 deaths; Rio de Janeiro, Jan. 19-26, 24 cases, 14 deaths.
Canada: Winnipeg, Feb. 1-15, 6 cases.
Cape Colony: East London, Jan. 11-18, 1 case, 1 death.
China: Hongkong, Dec. 4-11, 14 cases, 12 deaths; Shanghai, Jan. 12-19, 2 cases, 14 deaths.
Egypt: Cairo, Jan. 21-28, 1 case; Suez, Dec. 31-Jan. 14, 3 cases.
France: Brest, Jan. 25-Feb. 8, 3 cases, 1 death; Paris, 21 cases, 1 death.
Great Britain: Edinburgh, Feb. 1-8, 1 case; Leith, Dec. 25-Feb. 8, 6 cases, 3 deaths.
India: Bombay, Jan. 14-28, 23 deaths; Calcutta, Dec. 28-Jan. 11, 11 deaths; Madras, Jan. 18-24, 3 deaths.
Italy: General, Jan. 31-Feb. 6, 57 cases.
Japan: Kobe, Jan. 18-Feb. 1, 1,792, cases, 603 deaths; Nagasaki, Jan. 19-26, 2 cases; Osaka, Jan. 25-Feb. 1, 204 cases, 134 deaths; Tokyo, Feb. 4, present; Yokohama, Jan. 25-Feb. 4, 46 cases, 10 deaths.
Manchuria: Dalny, Jan. 18-25, 3 cases.
Mexico: Aguascalientes, Feb. 2-16, 4 deaths; Monterey, Feb. 9-16, 1 death.
Russia: Moscow, Jan. 18-Feb. 1, 76 cases, 24 deaths; Warsaw, Nov. 16-Dec. 14, 75 deaths.
Spain: Denia, Jan. 25-Feb. 8, 12 cases, 1 death; Valencia, Feb. 2-9, 18 cases, 2 deaths.
Turkey: Constantinople, Jan. 27-Feb. 9, 9 deaths.

YELLOW FEVER.

Brazil: Manaos, Jan. 18-Feb. 1, 6 deaths; Para, Jan. 25-Feb. 6, 51 cases, 30 deaths.
Ecuador: Huigra, Feb. 4-11, 4 deaths.
Venezuela: Ciudad Bolivar, Jan. 1-31, present.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 4-11, 45 cases, 35 deaths; Mariquina, 45 cases, 43 deaths.

CHOLERA—FOREIGN.

India: Bombay, Jan. 14-21, 1 death; Calcutta, Dec. 28-Jan. 11, 86 deaths; Rangoon, Jan. 11-28, 4 deaths.

PLAGUE—INSULAR.

Hawaii: Hilo, Feb. 24, 1 case.

PLAGUE—FOREIGN.

Brazil: Bahia,, Dec. 28-Feb. 1, 6 cases, 4 deaths; Rio de Janeiro, Jan. 19-26, 5 cases.
China: Hongkong, Dec. 28-Jan. 4, 1 case, 1 death.
Egypt: Alexandria, Jan. 19-Feb. 6, 1 case, 1 death; Provinces: Assiout, Jan. 25-Feb. 6, 7 cases; Fayoum, Jan. 29-Feb. 1, 2 cases; Gurgeh, Feb. 4-6, 20 cases, 18 deaths; Minieh, Jan. 28-Feb. 2, 2 cases, 4 deaths.

India: General, Jan. 4-11, 3,719 cases, 2,833 deaths; Bombay, Jan. 14-28, 47 deaths; Calcutta, Dec. 28-Jan. 11, 29 deaths; Madras, Jan. 11-24, 6 deaths; Rangoon, Jan. 11-18, 10 deaths.
Japan: Osaka, Jan. 18-25, 4 cases, 5 deaths.
Turkey: Bagdad, Dec. 28-Jan. 18, 126 cases, 24 deaths.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### LIABILITY OF CHARITABLE INSTITUTIONS FOR INJURIES TO PATIENTS.

*To the Editor:*—Have you records of any cases against charitable institutions in which damages have been assessed for patients being burned with hot water bottles? This hospital is being sued by a patient who received a large burn from a hot water bottle. She was not a charity patient. A. E. D.

ANSWER.—According to the decision of Second Appellate Division of the Supreme Court of New York (Wilson vs. The Brooklyn Homeopathic Hospital), a charitable institution acting as a hospital, having used due diligence in selecting a surgeon, is not liable for his negligence in operating on a patient who pays only for his board and attendance and not for the surgeon's services. (THE JOURNAL, Oct. 8, 1904, p. 1085.)

In Hewett vs. Woman's Hospital Aid Association, it was held by the Supreme Court of New Hampshire that the hospital, although a charitable institution, was liable to its servant, a nurse, for failure to perform its duty in informing her of the contagious character of a disease in a patient she was required to nurse. The charitable character of the institution did not relieve it from the liability for negligence to its employés. (THE JOURNAL, Nov. 10, 1906, p. 1592.)

The Kansas City Court of Appeals holds in Adams vs. University Hospital that funds devoted to charity can not be diverted to other objects, and hence that a hospital devoted to charitable treatment of the sick can not be held liable either for the negligent acts of its servants or for negligence in selecting them. The fact that it also treats certain patients for pay is held to make no difference. Numerous cases are cited as authorities for these contentions. The case on which this decision was rendered consisted in a claim for damages for injury by the negligent application of a hot water bottle. (THE JOURNAL, March 30, 1907, p. 1135.)

A decision by the Supreme Court of Utah tends to support the view that if a pay hospital treats a patient gratuitously it still owes him a certain duty. (THE JOURNAL, April 27, 1907, p. 1458.)

The Supreme Court of Illinois holds that a city is not liable for the negligence of its servants in case a hospital is established for charity or in pursuance of the desire to benefit its citizens as an exercise of police power. (THE JOURNAL, Nov. 23, 1907, p. 1801.)

The Court of Appeals of Georgia holds, in Medical College of Georgia vs. Rushing, that public eleemosynary institutions are liable for the torts of their agents, the same as business corporations, if they have any property or are in receipt of any income not exclusively devoted to public charity out of which a judgment against them can be satisfied. Where a hospital holds itself out for the treatment of the sick, whether this treatment be given as a gratuity or is to be paid for, the implication arises that such treatment will be performed in a skilful manner, and such hospital will be liable for unskilful or negligent treatment of the patient. The question whether a patient is a charity patient or the institution is paid for his treatment, the court says, does not change the rule of liability if, under the law, this class of institutions is liable at all. (THE JOURNAL, Jan. 4, 1908, p. 70.)

### HOW TO FORM AN ANTITUBERCULOSIS SOCIETY.

BUTLER, MO., March 2, 1908.

*To the Editor:*—We are trying to organize an antituberculosis Society. How shall we proceed to carry out our project?
E. N. CHASTAIN.

ANSWER.—Every community ought to have such a society, the range of whose activities will depend on the importance the disease plays in the community. For smaller towns, an educational campaign, with lectures on the cause and nature of tuberculosis and the distribution of printed literature will be sufficient. Eventually, also, with headquarters where, at stated hours, advice can be given to poor consumptives and their families. It is important that the membership of such a society consists of both laymen and physicians (men and women), and that it cooperates with other medical and charitable institutions.

Tuberculosis, although a germ disease, is dependent in its progress on external factors which lower the resistance of the body to infection. Against these external factors unfavorable environment, noxious occupation, crowded, ill-ventilated, dirty dwellings, faulty nourishment and bringing up of children and lastly against indiscriminate spitting, the campaign of such a society must be directed. A well-delivered lecture or a talk in a family where one member is afflicted with the disease, will be of infinitely more value than a pamphlet distributed broadcast. It is especially in the infected family that much good can be accomplished, but not only by directing all the attention to the diseased member, but especially to the other apparently unaffected members, among whom, as we know well by experience, the disease is particularly prone to spread. The direction of this work ought to be put into the hands of one individual, preferably the office of secretary of the society, and as soon as a plan of action has been adopted, the employment of a special visiting nurse can not be urged enough for the practical work in the families.

The next step might be the formation of a special dispensary, as the medical center of the campaign, and finally, when much experience has been gained, the building of a curative institution, a health camp or a sanatorium ought to be attempted. A perfected system of home assistance will do more toward stamping out the disease, than the most beautiful sanatorium, which concentrates all its efforts on the treatment of the one already diseased.

Dr. Livingston Farrand, the secretary of the National Association for the Study and Prevention of Tuberculosis, United Charities Building, 105 East 22d Street, New York City, will give every assistance in the organization of local societies on request.

### BOOKS ON PRACTICAL DIAGNOSIS AND TREATMENT.

Unfortunately the reply to Dr. Bicknell's inquiry on this subject (THE JOURNAL, Feb. 29, 1908, page 710), with a portion only of the list, was, through an oversight, published prematurely. The following books, the copy for which was overlooked, should be added thereto:

Allen, C. W.: "The Practitioners' Manual, A Condensed System of General Medical Diagnosis and Treatment." W. Wood & Co., New York. Net, $6.00.

Boston, L. N.: "A Text-Book of Clinical Diagnosis." Second edition. Saunders, Philadelphia, $4.00.

Butler: "Diagnostics of Internal Medicine." D. Appleton & Co., New York. Subscription price, $2.00.

Emerson, C. P.: "Clinical Diagnosis." Lippincotts, Philadelphia. Net $5.00.

Greene, C. Lyman: "Medical Diagnosis." Second edition, recently published. Blakiston Son & Co., Philadelphia. Net, $3.50. Contains a section on opsonic theory and technic.

Hare, H. A.: "Practical Diagnosis." Fifth Edition. Lea Bros. & Co., Philadelphia. Net, $5.00.

Musser, J. H.: "Medical Diagnosis." Fifth Edition. Lea Bros. & Co., Philadelphia. Net, $6.50.

Sahli, Prof. Dr. H., Edited by Kinnicutt, F. P., and Potter, N. B.: "Diagnostic Methods of Examination." From fourth German edition. Saunders & Co., Philadelphia. Net. $6.50.

Simon, Charles E.: "A Manual of Clinical Diagnosis by Microscopic and Chemical Methods." Fifth edition. Lea Bros. & Co., Philadelphia. Net $4.00.

Vierordt and Stuart: "Medical Diagnosis." Fourth revised edition, translated from fifth German edition. Saunders & Co., Philadelphia. Net, $4.00.

### GERMAN-ENGLISH DICTIONARY.

KEWAUNEE, WIS., Feb. 28, 1908.

*To the Editor:*—Please refer me to a good German-English dictionary. W. M. WOCHOS, M.D.

ANSWER.—For general use one of the most satisfactory German-English and English-German dictionaries is Adler's, published by D. Appleton and Company, 436 Fifth Avenue, New York, at $1.50 for the abridged and $5 for the library edition. A satisfactory German-English dictionary for medical terms is that of Lang and Abrahams, published by P. Blakiston's Son & Company, 112 Walnut Street, Philadelphia, at $4. An invaluable work for one who reads much foreign medical literature is the National Medical Dictionary of Dr. John S. Billings, which contains the medical terms of five languages in a single alphabetical sequence. This is published by Lea Brothers & Company, 706 Sansom Street, Philadelphia, at $12. Further comments on translating appeared in THE JOURNAL, Jan. 5, 1907, p. 70; July 22, 1905, p. 253; and Dec. 16, 1905, p. 1896.

### LITERATURE ON ACROMEGALY.

HOT SPRINGS, ARK., Feb. 29, 1908.

*To the Editor:*—Please refer me to the latest work on acromegaly, and the use of thyroid or pituitary extracts in that dis-

ease. I am conversant with all that is in the text-books, but if there are any recent articles I should like to see them.

A. J. EDWARDS.

ANSWER.—There is very little on this subject in recent literature. The following articles have appeared in the last two years:

Pel, P. K.: Familial Occurrence of Acromegaly and Myxedema, with Syphilis, *Berl. klin. Wochschr., xlii,* No. 44 *a.*

Barrett, A. M.: Spinal Cord Degeneration in a Case of Acromegaly with Tumor of the Pituitary Region. *Amer. Jour. Med. Sci.,* February, 1906.

Bleibtrein, L.: Case of Acromegaly in which the Hypophysis was Found Destroyed by Hemorrhage. *Münch. med. Wochschr.,* lii, No. 42.

Perry, J. C. P.: Peculiar Form of Acromegaly Possibly Resulting from Injury, *British Med. Jour.,* Dec. 30, 1905; abstracted in THE JOURNAL, Jan. 27, 1906, p. 308.

Garbini, G.: Function of the Hypophysis, *Rivista di patologia nervosa e mentale,* 1906; abstracted in THE JOURNAL, July 7, 1906, p. 36.

Osborne, O. T.: Therapeutic Uses of Thyroid Preparations, THE JOURNAL, Nov. 3, 1906, p. 1475.

Porter, E. H.: Case of Acromegaly wth Interesting Eye Symptoms, *Ophthalmic Record,* June, 1906.

Salmon, A: Study of the Relations of the Pituitary Body to Sleep, *Rev. de Médecine,* xxvi, No. 4; abstracted in THE JOURNAL, Aug. 4, 1906, p. 393.

Roy and Froin: Acromegaly with Hypertrophy of the Pituitary Body and Cyst Formation, *Rév. de Médecine,* xxvi, No. 4.

Gemelli, A.: Secretory Processes in Pituitary Body of Mammals, *Arch. per le Scienze Mediche,* xxx, No. 5; abstracted in THE JOURNAL, June 22, 1907, p. 2169.

Berglund, V.: Acromegaly, *Hygeia,* September, 1907.

Neufeld: Changes in the Larynx in Acromegaly, *Zeitschr. f. klin. medizin,* lxiv, Nos. 5-6.

## ISOLATION OF THE BACILLUS PARALYTICANS.

INDEPENDENCE, IOWA, Jan. 28, 1908.

*To the Editor:*—Can you tell me where I can procure any articles which contain the technic used by W. Ford Robertson, of Edinburgh, in isolating the *Bacillus paralyticans?* Any information will be greatly appreciated. GEORGE DONOHOE.

ANSWER.—W. Ford Robertson discusses the rôle of bacterial intoxication in paresis in *Review of Neurology and Psychiatry,* 1906, pages 73 and 258. His work is reviewed by Spiller in *Progressive Medicine,* 1907, iii, page 260. *Bacillus paralyticans* is a diphtheria-like bacillus and it is not decided whether it is merely an attenuated genuine diphtheria bacillus or a distinct microbe. Like others, Robertson finds it frequently in the alimentary, respiratory and other mucous tracts of persons not affected with general paresis. In white rats the bacilli are said to produce motor weakness, incoordination, dyspnea and drowsiness. Much remains to be done before any final conclusions are permissible.

## PICRIC ACID IN BURNS.

LINCOLN, ILL., Feb. 23, 1908.

*To the Editor:*—Will you give me the consensus of opinion among surgeons regarding the value and efficiency of solutions of picric acid in the treatment of burns? H. G. HARDT.

ANSWER.—It can hardly be said that there is a consensus of opinion as to the treatment of burns, but as will be seen from an article on this subject in the department of Therapeutics in THE JOURNAL, Sept. 7, 1907, page 863, mixtures containing picric acid have a large number of advocates. It is usually claimed that this treatment relieves pain, but C. E. Tennant, in a letter to THE JOURNAL, Nov. 16, 1907, page 1692, states that in his experience it caused excruciating pain.

## COMPOSITION OF TRITICA.

EVANSTON, ILL.

*To the Editor:*—What is the composition of tritica? Has it any greater value than fluidextractum tritici? I find that it is used to a considerable extent and that those who are using it are under the impression that it contains one or more drugs.

HENRY B. HEMENWAY.

ANSWER.—Tritica is a preparation of triticum repens which was formerly made by the Searle and Hereth Company, Chicago. It appears to have differed from the fluidextractum tritici (U. S. P.) only in that the aqueous extract of the drug was evaporated in a vacuum.

Triticum repens, or couch grass, is regarded as of value simply for its local sedative action on the genitourinary tract. It is the least stimulant of its class and is considered by some a valuable sedative in cases of irritable bladder, cystitis, urethritis, etc. The fluid extract may be prescribed in doses of a fluidram every three hours in five or six ounces of water; the alcohol in the fluidextract is, to a certain extent, objectionable on account of its irritating properties. The remedy may be employed very freely, and preferably in the form of a decoction or tea. A good method of prescribing it is as follows:

℞. Tritici .....gm. 250 | or ʒviii
Divide in partes 8.

Sig.: Boil the contents of one package (one ounce) for fifteen minutes in a covered vessel with a quart of water, strain, and drink the tea as desired.

## HORACE FLETCHER AND HIS WRITINGS.

KEY WEST, FLA., Feb. 24, 1908.

*To the Editor:*—I am interested in your editorial "Diet and Health," Dec. 14, 1907, in which you mention the dietary habits of Mr. Fletcher. Can you give me his address and the titles of any of the books which he has written, as I should like to read more of his experience and experiments? G. R. PLUMMER.

ANSWER.—Mr. Fletcher's residence is Palazzo Salbante, Canal Grande, Venice, Italy; his American address is care of James P. Reilly, Battery Place, New York. The titles of some of his works are as follows: "The A. B.-Z. of Our Own Nutrition;" "The New Menticulture; or the A B C of True Living;" "The New Glutton or Epicure; or Economic Nutrition;" "Happiness as Found in Forethought Minus Fearthought;" "That Last Waif; or Social Quarantine." All the foregoing are published by Frederick A. Stokes Company, 333 Fourth Avenue, New York, at $1 net. "Optimism—a Real Remedy," is published by A. C. McClurg & Company, 221 Wabash Avenue, Chicago, at 75 cents.

## WHEN MAY THE GONORRHEIC MARRY?

CHICAGO, March 7, 1908.

*To the Editor:*—The answer to the query "When may the gonorrheic marry?" in THE JOURNAL, March 7, 1908, p. 791, gives the usual rules for hunting the gonococcus in the urethra and prostate, and exhibits the usual neglect of the possibility that this bacterium may persist in the seminal duct proper, after it is no longer discoverable in the urethra. The contents of the seminal duct and vesicle should be examined for the gonococcus in all cases—and they are numerous—in which the infection has reached the vesicles. These contents may be obtained through the natural nocturnal emission, more reliably than through digital massage of the vesicles. W. T. BELFIELD.

## WINTER CHOLERA OUTBREAKS DATA WANTED.

ESCANABA, Mich., Feb. 29, 1908.

*To the Editor:*—Any information as to local outbreaks of what has been termed, "winter cholera" will be appreciated by

O. C. BREITENBACH, M.D.

# *Association News*

## NEW MEMBERS.

List of new members of the American Medical Association for the month of February, 1908:

### ALABAMA.

Kimbrough, J. A., Thomasville.
Murray, M. W., New Decatur.
Tisinger, L. F., Eufaula.
Weed, W. A., Republic.

### ARIZONA.

Nichols, H. A., Cochise Co.

### ARKANSAS.

Weimar, Robert, Hot Springs.
Woods, R. P., Altheimer.

### CALIFORNIA.

Congdon, Maria, Pasadena.
Davies, B. C., Monrovia.
Easterday, G. S., Watsonville.
Forister, G. W., Pomona.
Friedman, W. L., Oakland.
Fuller, Hulbert, Ocean Park.
Hayden, T. M., Fresno.
Syer, W. H., Anaheim.
McReynolds, R. P., Los Angeles.
Miller, J. J., San Jose.
Phillips, T. P., Santa Cruz.
Porter, E. E., Watsonville.
Smith, T. H., Pomona.
Stockwell, G. N., Ventura.

### COLORADO.

Bradburn, Geo. A., Center.
Daniel, J. H., Merino.

### CONNECTICUT.

Allyn, G. S., New London.
Cronin, W. D., New London.
Girouard, J. A., Willimantic.
MacLean, D. R., Stamford.
McLarney, T. J., Waterbury.
Pendleton, C. E., Hebron.
Simonds, C. E., Willimantic.

### DISTRICT OF COLUMBIA.

Adams, R. D., Washington.
Rhett, H. J., Washington.

### GEORGIA.

Cooke, V. C., Atlanta.

### HAWAII, H. T.

Haida, K., Honolulu.

### ILLINOIS.

Balcke, W. A., Cropsey.
Bernhardi, C. O., Rock Island.
Biesenthal, Max, Chicago.
Black, S. M., Georgetown.
Bonnett, J. Y., Le Roy.
Bradley, M. M., Chatham.
Brinckerhoff, J. J., Minooka.
Brubaker, Ora G., Mt. Morris.
Cato, J. B., Hutsonville.
Coultas, R. J., Mattoon.
Dorsey, M. F., Streator.
Dostal, F. E., Chicago.
Dunn, D. W., Du Quoin.
Ehresmann, J. J., Carrollton.
Evans, D. J., Galesburg.
Fara, F. J., Chicago.
Fisher, G. C., Chicago.
Fitzgerald, D. H., Chicago.
Gansevoort, A., Chicago.
Gardner, G. A., Chicago.
Groth, F. W., Chicago.
Hardin, C. E., Trimble.
Henderson, F. H., El Paso.
Horner, E. H., Olney.
Lewis, C. M., Bridgeport.
Lobdell, Emie L., Chicago.
Lycan, R. S., Paris.
MacDowell, G. A., Chicago.
Maxwell, J. C., Sterling.

McGovern, J. H., Annapolis.
Miers, Edward, Des Plaines.
Mitchell, J. M., Oblong.
Morf, P. F., Chicago.
Newlin, LeRoy, Robinson.
Overmass, S. E., Chicago.
Palmer, F. A., Morris.
Roe, J. B., Oregon.
Ryerson, E. A., Kenilworth.
Schrader, J. F., Bridgeport.
Scruggs, J. B., O'Fallon.
Secker, W. V., Evanston.
Simpson, B. J., Chicago.
Trotter, G. S., Dundas.
Tweedy, J. R., Oroville.
Webster, E. M., Chicago.
Whitacre, H. N., Carbondale.
Wilkin, W. E., Oblong.
Williams, J. S., Jerseyville.
Woolston, W. J., Chicago.

INDIANA.

Anglin, G. W., Warsaw.
Benham, J. W., Columbus.
Gillespie, C. E., Crothersville.
Groman, H. C., Hammond.
Harris, C. E., Bloomington.
Kyte, H. R., Seymour.
W. R. Mattox, Terre Haute.
Shaley, F. W., Terre Haute.
Stroube, C. N., Roachdale.

IOWA.

Bigelow, C. T., Oxford.
Cottle, C. C., Marshalltown.
Murphy, H. W., Denver.
Teufel, J. C., Buffalo.
Thompson, O. P., Sumner.

KANSAS.

Barney, L. F., Kansas City.
Jones, Z. G., Tonganoxie.
Menninger, C. F., Topeka.
Romeo, Pasquale, Scammon.
Thompson, W. O., Dodge City.

KENTUCKY.

Ashbrook, W. A., La Center.
Blythe, Vernon, Paducah.
Carrick, J. C., Lexington.
Ehrich, W. S., Louisville.
Fultz, C. H., Vanceburg.
Gibson, W. H., Lerose.
Lowry, S. M., Elfton.
Slocum, H. J., Eagle Station.
Smith, J. T., Garmaliel.
Sphire, D. S., Moalyville.
Stubblefield, J. P., Corydon.
Wallace, Lew, Beard.
Wilcox, G. S., Willard.
Willis, P. T., Cromwell.

LOUISIANA.

Hanson, J. D., Donaldsonville.

MAINE.

Haley, J. Robert, Kennebunk.
Ober, F. R., Northeast Harbor.

MARYLAND.

Downey, J. W., Jr., Baltimore.
Hayes, R. B., Baltimore.

MASSACHUSETTS.

Chandler, C. L., Fitchburg.
Fuller, E. P., Lawrence.
Greenwood, S. E., Templeton.
Hanscom, Sanford, Somerville.
Hartman, Gustave, Lynn.
Hussey, E. J., Holyoke.
Lawlor, R. H., Methuen.
Littlefield, G. C., Webster.
McGillicuddy, J. T., Worcester.
Seaver, E. P., Jr., Nantucket.

MICHIGAN.

Bonine, J. Gordon, Cassopolis.
Fought, C. L., Erie.
Fralick, F. J., Greenville.
Gordon, G. G., Detroit.
Lake, C., N., Detroit.
Little, E. W., Belding.
Monroe, D. J., Elkton.
Patterson, A. E., Plymouth.
Zumstein, F. E., Detroit.

MINNESOTA.

Fogarty, C. W., Browns Valley.

MISSISSIPPI.

Deanes, S. R., West Point.

MISSOURI.

Duckett, T. H., Milford.
Hiller, F. B., Kahoka.
Hughes, H. S., St. Louis.
Neuhoff, F., St. Louis.
Saxl, Ernst, St. Louis.
Van Hoefen, S., St. Louis.

NEBRASKA.

McGirr, J. I., Beatrice.

NEVADA.

St. Clair, Raymond, Reno.

NEW HAMPSHIRE.

Kean, M. E., Manchester.

NEW JERSEY.

Boysen, T. H., Egg Harbor City.
Kent, M. M., Trenton.
Stern, Arthur, Elizabeth.

NEW MEXICO.

Hammer, W. J., Silver City.

NEW YORK.

Alger, E. M., New York City.
Appley, J. D., Binghampton.
Brown, H., Beattie, Yonkers.
Conley, J. A., Penn Yan.
Cunningham, W. P., New York City.
Drake, B. F., New Rochelle.
Easton, F. E., Syracuse.
Floersheim, Samuel, New York City.
Ford, W. E., Utica.
Garrigue, Evelyn, New York City.
Glick, S. A., Brooklyn.
Graham, H. F., Brooklyn.
Gray, B. H., New York City.
Halsey, R. H., New York City.
Heyman, M. B., Central Islip.
Hunt, C. F., New York City.
Hyams, Benno, New York City.
Janeway, T. C., New York City.
Johnson, G. V., Schenectady.
Johnson, G. Q., Ardsley.
Lawrence, G. A., New York City.
Léon, A. M., New York City.
Lysaght, Ellen, Brooklyn.
Maxson, S. C., Utica.
McClellan, E. S., Saranac Lake.
Moe, R. W., Peekskill.
Rau, L. S., New York City.
Robinson, Daisy M. O., New York City.
Rossi, F. G., Utica.
Santer, R. A., Schenectady.
Smith, F. T., Troy.
Wade, H. A., Brooklyn.
Whiteside, M. J., Rochester.
Wyeth, G. A., New York City.

NORTH CAROLINA.

Hiatt, H. B., Clinton.
Love, B. E., Ridgeville.
Patterson, J. F., New Bern.

NORTH DAKOTA.

Chambers, C. L., Bismarck.
Myklestad, Nils, Williston.

OHIO.

Beane, B. F., New Paris.
Bonnell, G. H., Jersey.
Breese, E. S., Dayton.
Broughman, S. A., Dayton.
Cadwallader, Mary E., Dayton.
Coy, M. E., Dayton.
Frazier, S. S., Kunkle.
Good, Harman, Dayton.
Heistand, H. L., Donaldsville.
Hendren, S. E., Dayton.
Holliday, B. W., Cleveland.
Hornung, F. G., Hamilton.
Hyer, A. A., Moons.
Iddings, G. S., Cleveland.
Jacoby, C. W., Morrall.
Lane, A. H., Dayton.
Lichliter, D. C., Dayton.
Marsh, H. H., Seven Mile.
McGuffin, George, Pettisville.
McLaughlin, Thad., Springfield.
Montgomery, J. S., Huntsville.
Moses, Katherine R., Cuyahoga Falls.
Mosshammer, J. C., Dayton.
Odell, Samuel, Swanton.
Prather, W. F., Dayton.
Sander, E. J. C., Steubenville.
Sater, P. M., Hamilton.
Sellers, C. P., Zanesville.
Seward, I. E., Springfield.
Sharkey, T. D., Hamilton.
Smith, R. R., East Liberty.
Steinfeld, A. L., Toledo.
Straver, W. A., Steubenville.
Turnbull, Rosa C., E. Liverpool.
Yungblut, A. A., Cincinnati.

OKLAHOMA.

Anderson, R. M., Shawnee.
Reichley, E. J., Lambert.

PENNSYLVANIA.

Behan, R. J., Pittsburg.
Bethel, J. P., Philadelphia.
Boulton, Eleanore F., Philadelphia.
Cheesman, Le Roy H., Pittsburg.
Hall, Bret Harte, Bradford.
Hilliers, J. W., West Middlesex.
Hunter, R. J., Philadelphia.
Kilgore, F. D., Harrisburg.
Krebs, Adolph, Pittsburg.
Lyon, Edward, Williamsport.
Lynn, R. B., Sayre.
McCausland, W. S., Duquesne.
McCormick, E. L., Irwin.
Mead, R. K., Sagamore.
Newton, E. A., Philadelphia.
Skilling, M. J., Philadelphia.
Stauffer, C. C., Harrisburg.
Tomlin, A. N., Philadelphia.
Walters, B. F., Jr., Philadelphia.

RHODE ISLAND.

Magill, W. H., Providence.
Nestor, M. J., Providence.

SOUTH CAROLINA.

Turner, W. P., Jr., Coronaca.

SOUTH DAKOTA.

Burleigh, G. H., Lane.
Potter, G. W., Redfield.
Staley, F. H., Clear Lake.

TENNESSEE.

Abernathy, B. F., Danville.
Abernathy, C. A., Pulaski.
Burger, T. O., McMinnville.
Finley, R. H., Jellico.
Griffin, R. W., Tiptonville.
McClain, H. T., Mooresburg.
Sory, B. B., Cedar Hill.
White, G. R., Nashville.

TEXAS.

Hudgins, D. H., Forney.
Mayo, S. L., Cedar Creek.
Perry, M. O., Allen.
Shankle, W. M., Chilton.
Tappan, J. W., El Paso.

UTAH.

Kirtley, H. P., Salt Lake City.

VIRGINIA.

Atkins, W. V., Blackstone.
Brooks, Vernon, Portsmouth.
Bunting, C. H., Charlottesville.

WASHINGTON.

Griswold, W. S., Seattle.
Hunt, John, Seattle.
McClure, C. E., Seattle.
Thomas, Bert, Walla Walla.

WEST VIRGINIA.

Baker, J. A., Shirley.
Derby, A. P., Fayetteville.

WISCONSIN.

Andrews, M.P., Abbotsford.
Cleary, J. H., Kenosha.
Hipke, G. A., Milwaukee.
Mason, V. A., Marshfield.
Robinson, H. A., Kenosha.
Ruckle, W. M., Grand Rapids.
Spalding, J. B., Kenosha.
Thompson, G. E., Kenosha.
Van Westrienen, Rolt, Kenosha.

## Marriages

JOSEPH FARLEY, M.D., to Miss Lilian E. Lumley, both of Philadelphia, February 26.

GEORGE S. DILMORE, M.D., Philadelphia, to Miss Sarah Hall Mines of Camden, N. J., February 26.

JOHN CHARLES BRIDGMAN, M.D., Radcliffe, Iowa, to Miss Gertrude Tennant of Burnside, Iowa, February 12.

S. M. KAUFMAN, M.D., Detroit, Mich., to Miss Clara Enushensky of Galt, Ont., January 14.

ALBERT FALLER, M.D., Cincinnati, Ohio, to Miss Hortense Gimbel of St. Louis, Mo., February 24.

JOHN A. LONGMORE, M.D., Brooklyn, N. Y., to Miss Lillian Llewellyn Dagleish of Ottawa, Ont., February 26.

ROBERT M. CULLER, M.D., assistant surgeon, U. S. Army, Fort Monroe, Va., to Miss Anne E. Loser, at Philadelphia, February 12.

## Deaths

**Daniel Bennett St. John Roosa, M.D.** New York University Medical College, New York City, 1860; a member of the medical societies of the State and County of New York; interne in the New York Hospital; for three months assistant surgeon of the Fifth New York Volunteer Infantry during the Civil War; later surgeon of the Twelfth New York Volunteer Infantry; professor of ophthalmology and otology in the University of the City of New York since 1866; and for a time occupant of the same chair in the University of Vermont, Burlington; president and professor of ophthalmology in the New York Postgraduate Medical School and Hospital; for two years president of the American Otological Society; once president of the International Otological Society; member of the American Ophthalmological Society; and corresponding member of the Medico-Chirurgical Society of Edinburgh; died suddenly at his home in New York City, March 8, from heart disease, aged 69.

**Dudley D. Saunders, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1856; New York University Medical College, New York City, 1856; a member of the American Medical Association; professor of physical diagnosis and clinical and forensic medicine in the Memphis Hospital Medical College; a surgeon in the Confederate service during the Civil War; a veteran of four yellow-fever epidemics in Memphis; died at his home in that city, February 24, from pneumonia, after a short illness, aged 72.

**Ebenezer Nye Hutchinson, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1848; a director of Union Theological Seminary for many years, and secretary of the Board of Trustees of the General Assembly of the Presbyterian Church of the South; who had not practiced for several years; died at his home in Charlotte, N. C., January 30, from senile debility, after an illness of one week, aged 80.

**Hal C. Wyman, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1873; a member of the American Medical Association, Detroit Academy of Medicine and Michigan Surgical and Pathological Society; surgeon to the Detroit Emergency Hospital; president of, and professor of surgery in, the Michigan College of Medicine and Surgery, Detroit; once a member of the Michigan State Board of Corrections and Charities; widely known as a surgeon and writer on surgery; died at his home in Detroit, March 9, from pneumonia, after a brief illness, aged 55.

**Vesta Delphene Miller, M.D.** Boston University School of Medicine, 1891; of Needham, Mass.; a member of the American Medical Association and Gynecological Society of Boston, and president of the Woman's Auxiliary of the New England Baptist Hospital; for ten years professor of gynecology and pediatrics in her alma mater; died in Eliot Hospital, Boston, February 25, from diverticulitis, aged 64.

**John P. Probasco, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1869; a member of the American Medical Association; a veteran of the Civil War; from 1889 a member of the board of education of Plainfield, N. J., and since 1894 president of the board; consulting surgeon of the Muhlenburg Hospital; died suddenly from heart disease at his home, February 25, aged 65.

**Alexander Spear McClean, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1842; a member of the Massachusetts and Hampden District medical societies; said to have been the oldest practitioner in Springfield, Mass.; town doctor of Springfield in 1848; later city physician and member of the school board; died at his home, from cerebral hemorrhage, February 22, aged 86.

**Augustus F. F. Ferguson, M.D.** Michigan Homeopathic Medical College, Lansing, 1872; a member of the City Council of Lansing; a member of the legislature from 1889 to 1891; superintendent of the poor of Ingham County for several years; died at his home in Lansing, February 23, from valvular heart disease, after an illness of more than a year, aged 60.

**Levi Jewett, M.D.** New York University Medical College, New York City, 1857; Medical Director of the G. A. R. for the Department of Connecticut; assistant surgeon of the Fourteenth Connecticut Volunteer Infantry during the Civil War; died at his home in Cobalt, Conn., January 3, from pneumonia, after an illness of six days, aged 73.

**Joseph Y. Mangum, M.D.** University and Bellevue Hospital Medical College, New York City, 1898; a member of the New York Academy of Medicine and lecturer on surgery in the New York Polyclinic; died at his home in New York City recently, aged 33, and his body was sent to his old home in North Carolina, February 26.

**Charles Francis Fitzgerald, M.D.** College of Physicians and Surgeons in the City of New York, 1898; a member of the American Medical Association and an alumnus of and assistant surgeon in St. Vincent's Hospital, New York City; died in that institution, February 27, from heart disease, after a brief illness, aged 33.

**Charles Woodhull Eaton, M.D.** Hahnemann Medical College and Hospital of Chicago, 1879; New York Homeopathic Medical College and Hospital, 1878; chief medical director of the Des Moines Life Insurance Company; died at his home in Des Moines, February 27, from pneumonia, after an illness of three weeks, aged 52.

**William Henry Giberson, M.D.** Jefferson Medical College, Philadelphia, 1896; of Beverly, N. J.; a member of the Medical Society of New Jersey and Burlington County Medical Society, was struck by a train at Beverly, February 28, and died the next day, aged 40.

**Warren Newton Davis, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1872; a member of the American Medical Association; a pioneer practitioner of Wardner, Idaho; died in Los Angeles, Cal., where he had gone for his health, February 18.

**A. B. Collins, M.D.** Vanderbilt University Medical Department, Nashville, Tenn., 1900; a member of the Medical Association of the State of Alabama and Lamar County Medical Society; died at his home in Kennedy, Ala., February 24, from pneumonia, aged 35.

**Webster W. Wynn, M.D.** University of Buffalo (N. Y.) Medical Department, 1855; post surgeon at Dixon, Ill., during the Civil War; and for half a century a practitioner of that city; died at his home from paralysis, after an illness of four days, February 28, aged 78.

**Charles W. Sonnenschmidt, M.D.** Georgetown University, School of Medicine, Washington, D. C., 1867; a veteran of the Civil War; died at his home in Washington, February 28, from heart disease, from which he had suffered for several years, aged 76.

**Francis M. Holden, M.D.** Medical School of Harvard University, Boston, 1884; who practiced medicine for only a short time, afterward becoming a stock broker in Philadelphia; died suddenly in Paris, France, February 28, from heart disease, aged 50.

**William Frederick Heald, M.D.** Dartmouth Medical School, Hanover, 1869; a member of the Massachusetts and Middlesex District medical societies; superintendent of Cutter Retreat, East Pepperell, Mass.; died Nov. 13, 1907, after a long illness, aged 64.

**Rufus Asaph Crittenden, M.D.** University of Vermont, Medical Department, Burlington, 1871; a member of the Massachusetts and Essex District medical societies; died recently at his home in Haverhill, Mass., after an illness of six years.

**Daniel F. Greenwald, M.D.** Jefferson Medical College, Philadelphia, 1885; a member of the American Medical Association; died at his home in Philadelphia, February 26, from nephritis, after an illness of more than three years, aged 55.

**Alexander Theriot, Jr., M.D.** Medical Department of the University of the South, Sewanee, Tenn., 1900; of Lockport, La., died in the Touro Infirmary, New Orleans, February 19, from an accidental gunshot wound of the abdomen, aged 30.

**William F. Kramer, M.D.** Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1903; died from pneumonia at his home in Lynnhurst, Louisville, February 23, after an illness of ten days, aged 39.

**Charles A. Ring, M.D.** University of Buffalo (N. Y.), Medical Department, 1878; a retired practitioner of Appleton, N. Y., was found dead at the home of his brother at Olcott Beech, N. Y., February 28, from heart disease, aged 53.

**John Henderson Coverly, L.R.C.S. and L.R.C.P.** Edinburgh, Scotland, 1865; a member of the medical societies of the State of New York and County of Kings; died at his home in Brooklyn, February 25, after a prolonged illness, aged 65.

**Zeno E. Beenblossom, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1881; of Oklahoma City, Okla.; secretary of the State Live Stock Sanitary Commission; was shot and killed, February 18, in a quarrel, aged 52.

**Amos S. Jones, M.D.** Albany (N. Y.) Medical College; surgeon of the Forty-first Wisconsin Volunteer Infantry during the Civil War; died suddenly at his home in Dayton, February 23, from cerebral hemorrhage, aged 77.

**Benjamin Smith Nichols, M.D.** Vermont Medical College, Woodstock, who retired from active practice in 1851; president of the Pomona, California, Land and Water Company; died at his home in Pomona, January 26, aged 83.

**John M. Galphin, M.D.** Medical College of Georgia, Medical Department University of Georgia, Augusta, 1845; of Beech Island, S. C., died from paralysis at the home of his daughter in Talatha, S. C., Sept. 3, 1907, aged 86.

**Lewis Carpenter, M.D.** Medical College of Indiana, Indianapolis, 1879; Missouri Medical College, St. Louis, 1885; of San Francisco, Cal., a veteran of the Civil War; died at Indio, Cal., February 20, after a short illness.

**James C. Ball, M.D.** Eclectic Medical University, Kansas City, Mo., 1904; of Kansas City; died at Wesley Hospital, Kansas City, February 28, from injuries received in a street-car accident the day before.

**E. Hudson Sammons, M.D.** Rush Medical College, Chicago, 1880; a member of the American Medical Association; died at his home in Chicago, March 5, from heart disease, after an illness of ten days, aged 58.

**William W. Doxey, M.D.** Medical Department, University of Nashville, Tenn., 1862; for many years a practitioner of Anderson, Tenn., died at the home of his daughter in Nashville, February 22, aged 75.

**Rufus M. Elliott, M.D.** Rush Medical College, Chicago, 1860; for 25 years a practitioner of Mackinaw, Ill.; died at his home in Pekin, Ill., February 15, from pneumonia, after an illness of one week, aged 70.

**Maximilian Gilbert, M.D.** University of Berlin, Germany 1883; Frederick William University Berlin, Germany, 1884; formerly of Chicago; died at his home in Milwaukee, February 28, aged 51.

**F. L. Stephens, M.D.** Louisville National Medical College, Medical Department of State University, Louisville, 1887; of Mart, Texas; died at the home of his brother in Mexia, Texas, February 21.

**Thornbury Bailey Bartlett, M.D.** Eclectic Medical Institute, Cincinnati, 1879; died at his home in Mount Clare, W. Va., February 25, from paralysis, after an illness of more than a year, aged 72.

**Lucy H. A. Brown, M.D.** Cleveland (Ohio) Homeopathic Medical College, 1882; died at her home in Providence, R. I., February 14, from kidney disease, after a protracted illness, aged 66.

**H. Jerningham Boone, M.D.** University of Maryland School of Medicine, Baltimore, 1844; for many years a practitioner of Buckeystown, Md.; died at Weverton, Md., February 22, aged 87.

**Adolph P. Bernhardt, M.D.** National Medical University, Chicago, 1901; a member of the Illinois State and Chicago medical societies; died at his home in Chicago, February 21, aged 41.

**Richard J. Gibbons, M.D.** Homeopathic Medical College of St. Louis, 1875; of Kansas City, Mo.; died suddenly from heart disease, on a street car in Kansas City, Dec. 13, 1907, aged 65.

**James S. McMurray, M.D.** Medical College of Indiana, Indianapolis, 1870; died at his home in Frankfort, Ind., February 25, from acute nephritis, following an attack of erysipelas.

**William Darlington King, M.D.** Hahnemann Medical College and Hospital, Philadelphia, 1884; died at his home in Bellefield, Pittsburg, Pa., from pneumonia, February 18, aged 47.

**John McMaster, M.D. C.M.** Trinity Medical College, Toronto, 1904; *x*-ray specialist in the Toronto General Hospital; died in that institution February 20, from septicemia, aged 49.

**Joseph Greer, M.D.** Tulane University of Louisiana, Medical Department, New Orleans, 1869; a Confederate veteran; died at his home in Alvin, Texas, February 19, aged 64.

**Stanislaus P. O'Brien, M.D.** Medical School of Harvard University, Boston, 1907; died at his home in Centralville, Mass., February 27, after an illness of two weeks, aged 26.

**Fred J. Bradd, M.D.** Medical Department, Victoria College, Toronto, Ont., 1888; died in his home at Petersboro, Ont., Dec. 23, 1907, after an illness of about a week.

**James J. Rowe, M.D.** Eclectic Medical Institute, Cincinnati, 1858; died at his home in Abingdon, Ill., February 29, from paralysis, after an illness of five years, aged 76.

**George F. Milne, M.D.** Toronto University, Medical Faculty, 1905; of Fort Lupton, Colo.; died recently in St. Luke's Hospital, Denver, after a short illness, aged 27.

**James A. Williamson** (License W. Va., 1881), a member of the state legislature in 1864-1865; died at his home in Parkersburg, W. Va., February 29, aged 90.

**Arthur C. Green, M.D.** State University of Iowa, College of Homeopathic Medicine, Iowa City, 1880; died at his home in Los Angeles, Cal., Nov. 21, 1907, aged 57.

**David D. Stevens, M.D.** Eclectic Medical College of the City of New York, 1878; died suddenly from heart disease at his home in New York City, Nov. 19, 1907.

**William A. Zellars, M.D.** Medical College of Georgia, Medical Department, University of Georgia, Augusta, 1878; of Palmetto, Ga.; died Nov. 8, 1907, aged 70.

**James Surman, M.D.** California Medical College, San Francisco, 1882; died suddenly in his room at Portland, Ore., from aortic aneurism, February 24, aged 66.

**Ben B. Scott, M.D.** University of Louisville (Ky.) Medical Department, 1868; a retired practitioner of Campbellsville, Ky., died at his home, January 16.

**William Stuart Ross, M.D.** Eclectic Medical Institute, Cincinnati, 1858; died at his home in Madisonville, Ky., February 26, from heart disease, aged 78.

**William H. Semple, M.D.** Medico-Chirurgical College of Philadelphia, 1897; died at his home in Philadelphia, February 27, from tuberculosis, aged 43.

**Harvey C. Morey, M.D.** Rush Medical College, Chicago, 1854; a retired practitioner of Gilroy, Cal.; died recently at his home in that place, aged 81.

**A. Parker Smith, M.D.** College of Physicians and Surgeons in the City of New York, 1878; died at his home in New York City, January 20.

**Orin D. Childs, M.D.** Cleveland University of Medicine and Surgery, 1867; died at his home in Akron, Ohio, March 2, aged 67.

**William Bettridge, M.D.** Trinity Medical College, Toronto, Ont., 1855; died at his home in Strathroy, Ont., Oct. 15, 1907, aged 79.

**Louis J. Adams, M.D.** Jefferson Medical College, Philadelphia, 1857; died at his home in Evansville, Pa., Dec. 8, 1907, aged 53.

**James S. Alford, M.D.** Rush Medical College, Chicago, 1878; died at his home in Zionsville, Ind., February 26, aged 60.

**John S. Peaslee, M.D.** Albany (N. Y.) Medical College, 1874; of Schodack Landing, N. Y., died February 7.

### Deaths Abroad.

**C. F. Petersen, M.D.,** professor of surgery at Kiel, died February 18, aged 63. He was assistant to Esmarch during the Franco-Prussian War and at Kiel, and in 1874 founded the surgical polyclinic which was later incorporated with the university. His works are mostly on surgical subjects.

**J. Friedrich A. von Esmarch, M.D.,** the eminent German surgeon, and inaugurator of the "First Aid" or *Samaritaner* movement in Germany, died at Kiel, February 23, aged 85. He has written numerous works on military surgery and hygiene. His first communication on the subject of the now familiar "Esmarch bandage" for controlling hemorrhage was published in 1873. He served in the various campaigns in which Germany took part, and was physician general during the Franco-Prussian War. As a privat docent and professor he was connected with the Kiel university from 1849 to his retirement in 1899. He has been heaped with honors at home and abroad. His second wife was Princess Henrietta of Schleswig-Holstein, aunt of the emperor. A statue was unveiled with much ceremony in 1905 in his native town, Tönning. He leaves a son, Erwin, who has been professor of hygiene at Königsberg and later at Göttingen, since 1891, and is now 53 years old.

## *Medical Economics*

### Medical Organization in Australia.

The *Australasian Medical Gazette* for Dec. 20, 1907, contains an address by Prof. H. B. Allen, the retiring president of the Victorian Branch of the British Medical Association, showing the condition of medical organization in the antipodes. After reviewing the history of the Medical Society of Victoria and its final union with the Victorian Branch of the British Medical Association, and emphasizing the advantages gained by such a union, Dr. Allen outlines the work of the society for the future. He says:

The necessity for full organization of the medical profession needs no demonstration. The average income of the medical man in Great Britain is now estimated at between £220 to £250 ($1,100-$1,250). In Ireland matters have become so bad that a viceregal commission has been appointed, and a suggestion to establish a national medical service, and thus secure an approach to adequate remuneration, with a retiring allowance, has been approved by the State Medicine Section of the Royal Academy of Medicine, and by the Irish Medical Association and by the Council of the British Medical Association. In Austria the income tax returns [which from all reports are not reliable data.—ED.] show that one-third of the 9,000 registered practitioners receive less than £50 per annum; that 555 earn from £300 to £500 per year, and that only 300 earn more than £500 per year. The main causes of such disastrous conditions seem to be abuse of public hospitals, abuse of the medical benefit system of societies and other associations, the growth of medical associations, by which medical men in distress allow themselves to be farmed out by others, the activity of the prescribing chemist, the prodigious sale of proprietary medicines, and the general prevalence of quackery. In London it is said that in 1877 one in four of the population received free medical service, while in 1904 the proportion was approximately one in two. In England and Wales the proportion of the population dying in public institutions has nearly doubled within forty years, while in London it has more than doubled and has reached nearly 35 per cent. of the population. In Germany more than one-third of the population belongs to sick-clubs. The position of the profession is not so bad in Australia, but conditions that make for evil are undoubtedly present.

Evidently the physicians of Australia are facing many of the problems which confront us here. We have the advantage of the experience of the medical profession in Germany, Austria and Great Britain, where the fraternal society and medical club has been among the leading factors in the degradation

of the physician from an economic standpoint. As pointed out in the consideration of contract practice,[1] there is no justification either in economics or sociology for such organizations.

### Medical Fees.

Dr. S. M. Hohf, in the *Journal of the Minnesota State Medical Association*, February 15, states that the physician is the best judge of the value of his services, and that this fact has been admitted by the courts, but that he is often lax in exercising this prerogative, with the result that at the present day the medical profession is the poorest paid of all professions, and that the expense involved in education and equipment and the responsibilities assumed are entirely out of proportion to the amount charged. The family doctor is the most important factor in this consideration, because he constitutes the most numerous, as well as the most neglected class. Therefore, "if the profession is to make a common stand for better compensation, it must be for the sake of the general practitioner." Dr. Hohf assigns the following reasons for existing conditions:

1. The physician's time and thoughts, both during his college course and during active practice, are so occupied with his work that the business side is neglected.

2. The character of the physician's work almost invariably leads him into irregular habits of living.

3. The average physician's work is exclusive and prevents him from coming into intimate contact with other practitioners and so knowing that his financial circumstances are common to the profession.

He estimates that the minimum expense of the general practitioner in country practice, if he maintains a home, will amount to about $2,000 per year, and that in localities where office work is done for 50 cents per call and country work for 50 cents per mile, it is impossible to earn and collect sufficient to support him properly. It is, consequently, impossible for him to keep up with progress in the medical profession and to equip himself properly for work. In order to maintain his standing in the community, to do postgraduate work at stated intervals, and live as becomes his profession, it is necessary that the average physician's cash income, not what he books, but what is actually collected, should be about $4,000 per annum. An underpaid medical profession is a danger to a community, as physicians who barely make a living are not able to equip themselves properly or to acquire any more technical knowledge than they possessed at the time of graduation.

Dr. Hohf gives, in detail, the plan proposed by the committee of the Eighth District Medical Society, which includes a fee bill, not obligatory but suggestive, and representing the concensus of opinion of the physicians of the district.

### The Value of the County Medical Society to the Profession and the Public.

In the *Journal of the South Carolina Medical Association*, January, Dr. C. G. Croft discusses this subject. In distinguishing between the practice of medicine as a profession and the following of a trade, Dr. Croft quotes from Professor Faunce of Brown University:

> In two respects the medical profession deserves recognition and regard over all other callings in life. It has always insisted that the practice of medicine is a profession and not a trade. Trade is an occupation for livelihood; profession is an occupation for the service of the world. Trade is occupation for the joy of the result; profession is occupation for the joy in the process. Trade is occupation where anybody may enter, and is taken up temporarily until something better offers; profession is occupation with which one is identified for life. Trade makes a rival of every other trader; profession makes one the cooperator of his colleagues. Trade knows only the ethics of success; profession is bound by lasting ties of sacred honor.

Dr. Croft thus sums up the benefits of the county society:

1. It increases the knowledge of medicine in written books, medical journals and society proceedings.

2. It broadens the member's knowledge of his fellows and brings about a more kindly feeling.

3. It reveals the physician to himself, and substitutes modesty for arrogance and conceit.

4. It is a crucible for refining his studies, his observations and his thinking, thus increasing his practical value.

5. It aids in developing his power to teach his fellow-workers, his patients and the public to think logically, write clearly and speak fluently.

6. It gives him a chance to work for all his fellow practitioners and thereby attain the largest individual growth.

7. It creates an atmosphere of kindliness necessary for the older practitioner's richest life.

8. It gives the member a friendly alliance essential for the rounding out of the most perfect professional life.

### County Societies and Their Ideals.

Dr. F. M. Pottenger, in the *Southern California Practitioner*, January, discusses county medical organizations, stating that in the plan of reorganization the county society has become a most important body and can no longer be considered an exclusive organization. What it has lost in exclusiveness, however, it has gained in widened scope and has now become the common meeting ground for all reputable practitioners of medicine, a place for the promotion of good-fellowship and mutual interest, and for the origin of measures for the public welfare. The county society, as the judge of the fitness of members, should exercise a spirit of liberality, admitting all graduates in medicine who are honorable members of the profession, regardless of the school from which they graduated, provided they are willing to ignore the differences of sectarianism. The county society is a school where weak members may be kept in line and aided in the honorable practice of medicine. Dr. Pottenger recommends the establishment of branches of the county society in outlying towns of the county where the local physicians are not able to attend the main society meetings. Work done during the past year included agitation in securing the present California medical practice act, a campaign against illegitimate pharmacy, opposition to the repeal of the compulsory vaccination law, securing through its pure food committee an improved quality of food and dairy products for the citizens of Los Angeles County. The society took an active part in the cleaning and distinfection of Los Angeles as a preventive measure against bubonic plague. A committee on public hygiene has been appointed to inaugurate a campaign of public education through the press. This society, one of the largest and most active in the west, has certainly established a good record for the past year and gives promise of increased usefulness in the future.

## POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

### Fifth Month.

### THIRD WEEKLY MEETING.

**Splenomedullary Leukemia.**

Symptoms: Insidious onset, early symptoms, hemorrhages, enlarging spleen, circulatory and nervous symptoms.

Blood Changes: Number of white cells. Ratio of reds. Myelocytes, eosinophiles, "polymorphous blood." Number of red cells, nucleated forms.

Treatment: Roentgen ray. Exposures (length and location). Immediate and remote results. Hygienic treatment. Internal treatment. Arsenic, physiologic and therapeutic actions. Bone marrow preparations.

**Lymphatic Leukemia.**

Pathologic Anatomy: Glands usually involved, physical appearances, microscopic changes. Lymphoid structures usually involved. Changes in liver, leukemic nodules. Changes in kidneys. General distribution of nodules.

Diagnosis: Clinical history, arrangement of enlarged glands. Blood changes. Lymphocytes, other forms of whites. Reds, number, nucleated.

1. THE JOURNAL, Dec. 14, 1907, p. 2028.

# Medical Education and State Boards of Registration

## COMING EXAMINATIONS.

MAINE Board of Registration of Medicine, State House, Augusta, March 17-18. (Note change of place from Portland.) Secretary, Dr. William J. Maybury, Saco.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, April 2-3. Secretary, Dr. Gardner T. Swarts, Providence.

GEORGIA Eclectic Board of Medical Examiners, Atlanta, April 4. Secretary, Dr. Charles H. Field, 235 Capitol Ave., Atlanta.

ARIZONA Board of Medical Examiners, Phoenix, April 6-7. Secretary, Dr Ancil Martin, Phoenix.

UTAH State Board of Medical Examiners, Salt Lake City, April 6-7. Secretary, Dr. R. W. Fisher, Salt Lake City.

COLORADO State Board of Medical Examiners, Denver, April 7. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

MINNESOTA State Board of Medical Examiners, St. Paul, April 7. Secretary Dr. W. S. Fullerton, 214 American National Bank Building, St. Paul.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 7. Secretary, Dr. Charles L. Tisdale, 1879 Sutter St., San Francisco.

IDAHO State Board of Medical Examiners, Cœur d'Alene. Secretary, Dr. W. F. Howard, Pocatello.

MONTANA State Board of Medical Examiners, the Capitol, Helena, April 7. Secretary, Dr. W. C. Riddell, Helena.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, April 7-9. Secretary, Dr. H. M. Wheeler, Grand Forks.

FLORIDA Regular Board of Medical Examiners, Ocala, April 13-14. Secretary, Dr. J. D. Fernandez, Jacksonville

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, April 13-14. Secretary Dr. J. A. Massie, Santa Fe.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, April 14. Secretary, Dr. V. H. Hallman, Hot Springs.

ARKANSAS Eclectic Board of Medical Examiners, Little Rock, April 14. Secretary, Dr. A. J. Widener, Little Rock.

WEST VIRGINIA State Board of Health, Parkersburg, April 14-16. Secretary, Dr. H. A. Barbee, Point Pleasant.

ILLINOIS State Board of Health, Northwestern University Building, Chicago, April 15-17. Secretary, Dr. J. A. Egan, Springfield.

### Appointments to Pennsylvania Examining Boards.

On February 11 Governor Stuart announced the following appointments on the several boards of state medical examiners:

*Medical Society of Pennsylvania.*—Winters D. Hamaker, Crawford; M. P. Dickeson, Delaware.

*State Homeopathic Medical Society.*—Joseph C. Guernsey, Philadelphia; William A. Stewart, Allegheny.

*State Eclectic Medical Society.*—William Rauch, Cambria; C. M. Ewing, Dauphin, the latter to succeed J. M. Lowther, Somerset, whose term has expired.

### Chicago College Not in Good Standing.

In THE JOURNAL of February 15, page 551, we included in a list of colleges, which we stated had been declared not in good standing, the Reliance Medical College, a night school of Chicago. A protest being received from the president of that college, we wrote to the secretary of the State Board of Health of Illinois for further information. In his reply he says: "While the college is not in good standing with the board, it has not been 'declared' not in good standing—in fact, no action has yet been taken on the college."

### Plan for a Merger of Medical Schools in Georgia.

In the general movement for the establishment of stronger colleges which are better equipped to teach modern medicine and which will insist on a better preliminary requirement, the South is clearly doing its part. The University of Texas and Tulane University have made great strides; the Medical College of Alabama has become more closely united with the University of Alabama, and now word comes that a merger of the three schools of Georgia into one strong medical college, to be the medical department of the University of Georgia, is contemplated. This merger should be materialized and the school thus formed should have the backing, moral and financial, not only of the state but also of the medical profession.

### Oregon January Report.

Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the written examination held at Portland, Jan. 7-9, 1908. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 53, of whom 20 passed and 33 failed. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| California Med. Coll. | (1906) | 75.4 |
| Northwestern Univ. Med. School | (1906) | 86.1 |
| Rush Med. Coll. (1901) 80.7; | (1902) | 78.8 |
| College of P. and S., Chicago | (1907) | 83.3 |
| Sioux City Coll of Med. | (1898) | 78.2 |
| Drake University | (1904) | 86.5 |
| University of Michigan | (1906) | 79.1 |
| University of Minnesota | (1904) | 75 |
| Creighton Med. Coll. | (1906) | 81.5 |
| Cornell University | (1905) | 82.1 |
| University of Oregon | (1907) | 77.4, 77.8 |
| Hahnemann Med. Coll., Philadelphia. (1877) 76.6; | (1900) | 79 |
| Jefferson Med. Coll. | (1907) | 79.3 |
| University of Virginia | (1907) | 77.2 |
| McGill University, Montreal | (1900) | 75.1 |
| University of Toronto, Ontario | (1907) | 78.2 |
| University of Munich, Germany | (1903) | 75.1 |
| FAILED. | | |
| Northwestern Univ. Med. School | (1907) | 69.2 |
| Bennett Coll. of Ecl. Med. and Surg. | (1906) | 69.4 |
| Keokuk Med. Coll., Coll. of P. and S. | (1907) | 64.5 |
| Kansas Med. Coll. (1895) 57.8; | (1905) | 71.6 |
| University of Louisville (1895) 65.9; | (1907) | 59.9 |
| College of P. and S., Baltimore | (1901) | 67.5 |
| Maryland Med. Coll. | (1904) | 59.2 |
| University Med. Coll., New York City | (1887) | 45.3 |
| Hamline University | (1904) | 54.6 |
| University of Missouri | (1893) | 59.4 |
| Barnes Med. Coll. (1903) 68; | (1906) | 35.1 |
| Ensworth-Central Med. Coll. | (1900) | 56.4 |
| Eclectic Med. Inst., Cincinnati | (1887) | 50.9 |
| Willamette University, (1907) 52.8, 60.1, 60.7, 65, 65.2, 65.4, 67.8, 69.7, 70.4, 71.4, 73.8. | | |
| University of Oregon (1905) 53.7, 57.9; | (1907) | 70.8 |
| Jefferson Med. Coll. | (1905) | 59.9 |
| University of Nashville | (1895) | 33.1 |
| Laval University, Quebec | (1904) | 67.7 |

### Colorado January Report.

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, Jan. 7, 1908. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 70. Forty-eight applicants were licensed at this examination, eleven of whom passed the examination, and thirty-seven were registered on presentation of satisfactory credentials. It is also reported that three candidates failed at the October (1907) examination. The following colleges were represented:

| PASSED. College. | Year Grad. | Per Cent. |
|---|---|---|
| Northwestern Univ. Med. School (1906) 78.1; | (1907) | 71.5 |
| Denver and Gross Coll. of Med. (1906) 82; | (1907) | 71.1, 75 |
| Indiana Med. Coll. | (1906) | 76 |
| Louisville Med. Coll. | (1905) | 70.5 |
| Barnes University | (1900) | 73.5 |
| Lincoln Med. Coll. | (1897) | 71.3 |
| Omaha Med. Coll. | (1902) | 70.1 |
| University of Munich, Germany | (1903) | 72 5 |

| REGISTERED ON CREDENTIALS. | Year Grad. | Total Number. |
|---|---|---|
| Rush Med. Coll. (1882) (1903) | (1905) | 3 |
| Northwestern Univ. Woman's Med. School | (1890) | 1 |
| Hahnemann Med. Coll., Chicago | (1881) | 1 |
| College of P. and S., Chicago (1895) (1903) | (1904) | 3 |
| Northwestern Univ. Med. School (1875) (1894) | (1897) | 3 |
| Dunham Med. Coll. | (1900) | 1 |
| University of Louisville (1879) | (1907) | 2 |
| Louisville Med. Coll. | (1906) | 1 |
| Tulane University of Louisville (1903) | (1904) | 2 |
| University of Michigan | (1906) | 1 |
| University Med. Coll., Kansas City | (1906) | 1 |
| Barnes Med. Coll. | (1899) | 1 |
| Kansas City Hahnemann Med. Coll. | (1905) | 1 |
| Beaumont Hosp. Med. Coll. | (1899) | 1 |
| Omaha Med. Coll. | (1892) | 1 |
| Bellevue Hosp. Med. Coll. | (1877) | 1 |
| New York Med. Coll. and Hosp. for Women | (1895) | 1 |
| University of Buffalo | (1891) | 1 |
| University and Bellevue Hosp. Med. Coll. | (1904) | 1 |
| University Med. Coll., New York City | (1888) | 1 |
| Med. Coll. of Ohio | (1906) | 1 |
| Willamette University | (1902) | 1 |
| Woman's Med. Coll. of Pennsylvania | (1895) | 1 |
| Hahnemann Med. Coll., Philadelphia | (1895) | 1 |
| Jefferson Med. Coll. (1895) (1897) | (1907) | 3 |
| University of Pennsylvania | (1901) | 1 |
| Vanderbilt University | (1905) | 1 |
| FAILED AT OCTOBER, 1907, EXAMINATION. | | |
| Sioux City Coll. of Med. | (1902) | 58.1 |
| Creighton Med. Coll. | (1907) | 69.3 |
| Lincoln Med. Coll. | (1898) | 46 |

### South Dakota July, 1907, and January, 1908, Reports.

Dr. H. E. McNutt, secretary of the South Dakota Board of Medical Examiners, reports the written examinations held at

Sioux Falls, July 10-11, 1907, and at Mitchell, Jan. 8-9, 1908. The number of subjects examined in was 11; total number of questions asked, 90; percentage required to pass, 75.

At the examination held in July, the total number of candidates examined was 16, of whom 13 passed and 3 failed. Thirteen reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED.

| College. | Year Grad. | Per Cent. |
|---|---|---|
| George Washington University | (1907) | 81.5 |
| College of P. and S., Chicago | (1907) | 83 |
| American Coll. of Med. and Surg. | (1905) | 82.7 |
| Rush Med. Coll. | (1891) | 75 |
| Bennett Coll. of Ecl. Med. and Surg. | (1906) | 75 |
| Northwestern University Med. School | (1906) | 85.2 |
| Indiana Med. Coll. | (1907) | 92.2 |
| College of P. and S., Baltimore | (1888) | 79 |
| Tufts Coll. Med. School | (1901) | 91.1 |
| Washington University, St. Louis | (1904) | 80 |
| University of Nebraska | (1897) | 82.2 |
| Cleveland Med. Coll. | (1894) | 79.7 |
| Woman's Med. Coll. of Pennsylvania | (1905) | 84.3 |

FAILED.

| | | |
|---|---|---|
| Bennett Coll. of Ecl. Med. and Surg. | (1906) | 61 |
| Washington University, St. Louis | (1901) | 71.4 |
| Barnes University | (1905) | 69 |

LICENSED THROUGH RECIPROCITY.

| | Year Grad. | Reciprocity with. |
|---|---|---|
| American Med. Miss. Coll. | (1900) | Wisconsin. |
| Northwestern Univ. Med. School | (1906) | Minnesota. |
| National Med. University | (1905) | Iowa. |
| Rush Med. Coll. | (1901) | Wisconsin. |
| University of Iowa | (1904) | Iowa. |
| Drake University | (1901) (2, 1904) | Iowa. |
| Sioux City Coll. of Med. | (1903) (2, 1906) | Iowa. |
| Hamline University | (1905) | Minnesota. |
| University of Minnesota | (1907) | Minnesota. |

At the examination held in January the total number of candidates examined was 29, of whom 26 passed and 3 failed. The following colleges were represented:

PASSED.

| College. | Year Grad. | Per Cent. |
|---|---|---|
| American Med. Miss. Coll. | (1905) | 84.3 |
| Rush Med. Coll. (1881) 75; (1901) 76.3; (1902) 81; (1904) 89 | | |
| Northwestern Univ. Med. School (1898) 81.5; (1905) 89.6; (1907) 78.5, 80.3, 92. | | |
| College of P. and S., Chicago | (1907) | 83.4 |
| Hahnemann Med. Coll. and Hosp., Chicago | (1907) | 80.1 |
| Bennett Coll. of Ecl. Med. and Surg. | (1904) | 87.8 |
| University of Iowa | (1905) 83; (1907) 81, 82.5, 85.8 | |
| Sioux City Coll. of Med. | (1906) 78.4; (1907) | 83.4 |
| Keokuk Med. Coll. | (1907) | 76.7 |
| College of P. and S., Baltimore | (1882) | 76.9 |
| Tufts Coll. Med. School | (1905) | 86.4 |
| University of Minnesota | (1907) | 79.1 |
| Washington University, St. Louis | (1901) | 82.7 |
| Albany Med. Coll. | (1895) | 75 |
| Cleveland Univ. of Med. and Surg. | (1897) | 78.2 |

FAILED.

| | | |
|---|---|---|
| Sioux City Coll of Med. | (1906) | 68 |
| Barnes University | (1905) | 70.2 |
| University of Toronto | | *71.2 |

* Year of graduation not given.

## Vermont January Report.

Dr. W. Scott Ray, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Montpelier, Jan. 14-16, 1908. The number of subjects examined in was 13; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 15, of whom 13 passed and 2 failed. The following colleges were represented:

PASSED.

| College. | Year Grad. | Per Cent. |
|---|---|---|
| University of Maryland | (1906) | 78.4 |
| Tufts Coll. Med. School | (1903) | 80.1 |
| College of P. and S., Boston | (1907) | 79.1 |
| University of Vermont (1905) 83.9; (1906) 81.1, 82.1, 78.4; (1907) 76.6, 76.9, 77, 84, 84.7. | | |
| McGill University, Quebec | (1906) | 91.1 |

FAILED.

| | | |
|---|---|---|
| College of P. and S., New York | (1895) | 72.9 |
| Queen's University, Ontario | (1906) | 74.1 |

The following questions were asked:

ANATOMY.

1. Describe the bony pelvis and state what bounds the cavity of the true pelvis above. 2. How is Poupart's ligament formed? What purpose does it serve? 3. Name the muscles of the abdomen and give the origin, insertion and action of any one of them. 4. What structures pass through the foramen magnum? 5. Give the relative position, from without inward, of the structures contained in Scarpa's triangle. 6. Give the origin, course, distribution and function of the second pair of cranial nerves. 7. Name and bound the ventricles of the brain. 8. Describe the pleural membrane and give its relations. 9. Describe the male urethra. 10. What structures are inclosed within the broad ligaments of the uterus?

HYGIENE.

1. Name the impurities in water that may cause diarrhea. 2. What hygienic precautions should be taken in treating a case of tuberculosis? 3. Give the best method of frying meat and fish, and the reason for your opinion. 4. Tell how to make a beef tea that will be nutritious. 5. Mention and describe the diseases of animals that are communicable to man, and state the means that should be employed for the prevention of these diseases in man.

PHYSIOLOGY.

1. How are cells reproduced? 2. What are the functions of epithelium? 3. How is cartilage nourished? 4. What are the differences between arterial and venous blood? 5. What physiologic process takes place in the capillaries? 6. Give the function of the epiglottis. 7. What are enzymes? 8. How would digestion be affected were the ductus communis choledochus obstructed? 9. Give the physiology of urine excretion. 10. What is the function of the brain membranes?

BACTERIOLOGY.

1. Describe the two most common pyogenic bacteria, and name the bacteria found in erysipelas, cellulitis and pyemia. 2. What bacteria are likely to be mistaken for the tubercle bacillus, and how may this error be avoided? 3. Describe ptomains, and name three sources of ptomain poisoning. 4. Give a detailed description of Widal's test in typhoid fever. 5. Write twenty lines on serum therapy, and name diseases in which it has been employed successfully.

CHEMISTRY.

1. Define elementary and compound matter. 2. What do groups of atoms represent? What is their chemical notation termed? 3. What are normal, acid, basic and double salts? When one molecule, each, of hydrogen and chlorin unite, what is formed? 4. State composition, formation and properties of ammonia. How are nitrates formed in nature? 5. What are the properties of urea? Why do urates form deposits in joints and cartilages?

MATERIA MEDICA AND THERAPEUTICS.

1. Give preparations, alkaloids and physiologic action of nux vomica. 2. In what diseases would you prescribe arsenic? Name three preparations of same, with dose of each. 3. Name a drug useful as a vasodilator; vasoconstrictor. Give indications for its use. 4. Give the dose of apomorphia; give the therapeutic uses for same. 5. Write a prescription for the following: Lithemia, dysuria, chorea. 6. Mention the incompatibles of digitalis. When, in your opinion, is digitalis contraindicated? 7. Name three preparations of the following drugs and indications for their use: Glycyrrhiza, cinchona, camphora. 8. Give child (1 year) and adult dose of acetanilid, morphin, hyoscin. 9. For what conditions would you prescribe the following: Cantharides, capsicum, belladonna, strophanthus? 10. What are the therapeutic uses of the mineral acids?

PATHOLOGY

1. Describe the blood picture in pernicious anemia. 2. What are the microscopic findings in locomotor ataxia? 3. Compare the kidneys macroscopically in chronic parenchymatous and chronic interstitial nephritis. 4. Give the morbid anatomy of diphtheria. 5. What are the pathologic changes occurring in diabetes mellitus?

PRACTICE.

1. Discuss the prophylactic treatment of typhoid fever. 2. Mention the different types of diphtheria and give treatment. 3. Give prognosis in pulmonary tuberculosis. 4. What is the symptomatology of leprosy? 5. How would you treat a case of gonorrheal arthritis? 6. What course may gallstones pursue? 7. Write a short article on Addison's disease. 8. Name the valvular heart lesions in the order of their frequency of occurrence. 9. How would you manage a case of diabetes mellitus? 10. What may vertigo indicate?

LEGAL MEDICINE.

1. Give a medical definition of insanity. 2. What is atelectasis? Its effect on the newborn? 3. Of what use is a medical examination in life insurance? 4. What constitutes rape? Give medical evidence. 5. Give medical evidence that a child was born at term.

SURGERY.

1. How is suppuration developed? 2. Give causes, symptoms and treatment of osteomyelitis. 3. Name the varieties of ulcer. 4. Name the varieties and general symptoms of fracture. 5. How would you reduce a dislocation of the hip? 6. Give indications for tracheotomy and how performed. 7. Give symptoms of vesical calculus. 8. Give causes, symptoms and treatment of synovitis. 9. Give causes, symptoms and treatment of phlebitis. 10. Describe in detail an operation for hemorrhoids.

OBSTETRICS.

1. (*a*) Name the internal generative organs in the female. (*b*) Give brief description of each and (*c*) functions of each. 2. (*a*) Describe the phenomena of menstruation. (*b*) State the changes that occur in the uterus during menstruation. 3. (*a*) Describe the fetal circulation. (*b*) What changes occur at birth? 4. Give (*a*) probable and (*b*) certain signs of pregnancy. (*c*) Give Hegar's sign and method of eliciting it. 5. (*a*) State three of the most common conditions that might be mistaken for pregnancy. (*b*) Give differential diagnosis. 6. Give (*a*) etiology, (*b*) symptoms, (*c*) treatment of albuminuria of pregnancy. 7. Give (*a*) principal causes of postpartum hemorrhage, and (*b*) treatment. 8. (*a*) What conditions justify the induction of premature labor? (*b*) How should it be performed? 9. (*a*) Give symptoms of puerperal fever. (*b*) How would you guard against it, and (*c*) how treat it if it does occur? 10. Give (*a*) diagnosis of a breech presentation, and (*b*) management.

GYNECOLOGY.

1. Give (*a*) causes, and (*b*) treatment of pruritus vulvæ. 2. Give (*a*) etiology, (*b*) symptoms, and (*c*) treatment of acute cystitis. 3. Give (*a*) etiology, (*b*) symptoms, and (*c*) treatment of prolapse of the uterus. 4. (*a*) Name the most common causes of sterility in woman, and (*b*) state what can be done to overcome them. 5. (*a*) Give differential diagnosis between early pregnancy and a small fibroid tumor. (*b*) How would you replace a retroverted uterus?

# Society Proceedings

## COMING MEETINGS.

Association of American Medical Colleges, Cleveland, March 16-17.
Medical Society of the Missouri Valley, Lincoln, Neb., March 19-20.
Medical Association of District of Columbia, Washington, April 2.

## TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA.

*Tenth Annual Meeting, held at Charlotte, N. C., Feb. 18-19, 1908.*

The President, DR. STUART MCGUIRE, Richmond, Va., in the Chair.

The meeting was attended by more than 200 physicians, including a number of invited guests from Baltimore, New York and Cincinnati. Sixty-four applications for membership were received.

### Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Albert Anderson, Raleigh, N. C.; vice-presidents, Dr. R. C. Bryan, Richmond, Va.; Dr. J. E. Stokes, Salisbury, N. C.; Dr. W. P. Timmerman, Batesburg, S. C.; secretary-treasurer, Dr. J. Howell Way, Waynesville, N. C.; judicial council, Drs. E. G. Williams, Richmond; A. L. Crowell, Charlotte; A. E. Baker, Charleston.

Charleston, S. C., was selected as the next place of meeting.

### President's Address.

DR. STUART MCGUIRE reviewed the origin and growth of the association, which now has over 230 members. He referred to the value of membership in this and similar organizations, and pointed out that for this reason the claim made by some that there are too many medical societies can not be defended successfully. In addition to the educational and professional advantages accruing from membership, there are the equally important social and personal benefits to be derived by attending meetings. It brings together men who live in the same community, but for various reasons see little of each other.

### Inebriety.

DR. S. R. CROWELL, Charlotte, advocated the establishment by the state of a sanatorium for indigent inebriates, on the hypothesis that the habit is a disease. He said that it is useless to appeal to the will of a man when there is no will to appeal to.

### The Public Relations of the Medical Profession.

DR. CHARLES A. L. REED, Cincinnati, pleaded for a larger participation in public affairs, particularly by physicians, but devoted the major portion of the address to a discussion of society, in general, and the medical profession as a typical social group, to show the duty of these groups in respect to legislation. He said that physicians ought to take a more prominent part in public affairs. He referred to the influence physicians had exercised in molding public affairs in this country, and insisted that it is their duty to give to the public that assistance which their special knowledge can bring to bear on the solution of important public problems.

### Epilepsy.

The subject for the annual debate, a feature of the meetings of this association, was "Epilepsy." The discussion was participated in by Dr. Hodges, Richmond, Va.; Dr. J. P. Monroe, Davidson, N. C., and Dr. T. P. Whaley, Charleston, S. C.

### Tuberculosis.

Another subject which came in for very full discussion was tuberculosis. In this connection the following papers were read: "The Out- and Indoor Treatment of Tuberculosis," by Dr. Paul Paquin, Asheville, N. C.; "Modes of Infection in Tuberculosis," by Dr. Silvio Von Ruck, Asheville, N. C.; "Tuberculosis in Children," by Dr. Charles A. Julian, Thomasville, N. C.; "A Further Report of Tuberculosis Cases from 1898 to 1906," by Dr. J. A. Burroughs, Asheville, N. C.; "The Stomach in Tuberculosis," by Dr. L. G. Pedigo, Roanoke, Va.; "Tuberculinum in Pulmonary Tuberculosis," by Dr. Paul Ringer, Asheville, N. C.; "Creosote, Cod-Liver Oil and Ichthyolated Emulsion Compound in Tuberculosis," by Dr. John Roy Williams, Greensboro, N. C.; "Renal Tuberculosis," by Dr. LeGrand Guerry, Columbia, S. C., and "Tuberculosis of the Uterus and Its Adnexæ," by Dr. A. E. Baker, Charleston, S. C.

DR. L. F. BARKER, Baltimore, read a very interesting paper on "Recent Studies in Typhoid Fever."

Many other interesting papers were read, helping to make the meeting a very profitable one.

The entertainments provided for the visitors by the local committee included a reception and banquet, and contributed very much to the success of the meeting from a social standpoint.

## NEW YORK ACADEMY OF MEDICINE.

*Regular Meeting, held Feb. 6, 1908.*

The President, DR. JOHN A. WYETH, in the Chair.

### Present Significance of Chorioepithelioma.

DR. JAMES EWING is convinced that this group of tumors can be subdivided and different prognoses established on their histologic structure. Briefly, the conclusion was reached that chorioepithelioma includes three distinct tumors, which are distinguished by their gross appearance, histologic structure, prognosis and indications for treatment. The following classification and nomenclature was suggested:

1. Syncytioma.—Atypical chorioma of Marchand. This tumor produces a more or less diffuse infiltration of the myometrium, or a large intrauterine tumor, leading to marked enlargement of the uterus, but not tending to perforate the organ and not giving metastases. Histologically the tumor is composed of large syncytial wandering cells in the walls of sinuses and in the musculature. Hemorrhage, cachexia, suppuration and perforation by the curette might prove fatal. In early stages the prognosis is good.

2. Chorioadenoma Destruens.—Malignant placenta polyp. This tumor tends to infiltrate the sinuses of the uterus, considerably enlarging the organ, but not splitting it by a compact growth. Metastases occur in the lungs and vagina, but recovery may follow, certainly after vaginal metastases or after partial removal, possibly after pulmonary metastases. Histologically the growth shows villi.

3. Chorio-Carcinoma. This tumor produces a relatively small circumscribed growth in the musculature, tending rapidly to perforate the uterus without greatly enlarging it, and to cause local and pulmonary metastases. Histologically villi are absent. Langhans' cells and syncytium are present in masses. Morphologic signs of anaplasia and malignancy are always marked. The atypical and diffuse growth of cells yields a structure to which the term carcinoma is commonly applied. Tumors of this structure are probably always fatal. Operation sometimes seems to accelerate its course. The uterus should be removed as soon as possible. Infraction of the lines laid down in this classification might result in: 1, Inability to determine the true position of the tumor, from insufficient curettings; 2, the occurrence of intermediate types of tumors; 3, differences in structure in different portions of the same tumor.

### Recent Advances in Obstetrics.

DR. EDWIN B. CRAGIN said that marked advances had been made along three lines—a better knowledge of obstetric pathology, a better knowledge of the mechanical problems of delivery and better procedures. In the pernicious vomiting of pregnancy, the chief pathologic lesion is a fatty and hydropic degeneration of the liver, and, if the condition exists long enough, the lesions are practically identical with those of acute yellow atrophy. There is more or less degeneration of the renal epithelium of the convoluted tubules. The urine contains acetone, diacetic acid, B.-oxybutyric acid, indican and, perhaps, a trace of albumin and a few casts. These cases, as a rule, show a high ammonia nitrogen, high amido acid and

undetermined nitrogen and a low urea nitrogen. The hepatic and nephritic types are recognized clinically. In the hepatic type, aside from the convulsions, there is vomiting, with little edema, little albumin and casts, often jaundice, tenderness over the liver and ascites. In the nephritic types there are headaches, disturbances of vision, high tension pulse, nervous irritability, marked albuminuria and casts. These two types are often combined. In the livers studied by Dr. Cragin there were three varieties of lesions. In the nephritic type the cells near the periphery of the liver showed a moderately fatty and hydropic degeneration, without necrosis. In the hepatic type the fatty and hydropic degeneration at the periphery of the lobules was very marked; the cells had lost their nuclei and were, in fact, necrosed cells. There was a necrosis at the center of the lobule, a zone of fatty and hydropic degeneration near the periphery, and a few normal cells at the periphery along the portal vessels. In the third variety there was an area of degeneration of the liver cells with hemorrhage, the so-called hemorrhagic hepatitis. The lesion was situated at the periphery of the lobule.

In eclampsia the myocardium often showed degeneration and the brain edema and hemorrhage. In the nephritic type of eclampsia two classes were recognized, those patients who had previously suffered with nephritis and in whom the eclampsia had developed an acute exacerbation of the old trouble, and those whose kidneys had been previously free from disease. Figures presented showed a marked resemblance between the hepatic type of eclampsia and the pernicious vomiting of pregnancy, i. e., ammonia nitrogen, amido acid and undetermined nitrogen above normal, and urea nitrogen below normal.

In pernicious vomiting one does not feel that he has done his duty by his patient unless the urine has been examined and the nitrogen partition determined, and the presence or absence of acetone, diacetic acid, B.-oxybutyric acid, indican, etc., ascertained. The best results are obtained by colon irrigations, rectal feeding for a short time only, and early emptying of the uterus. Prolonged menorrhagia and metrorrhagia following labor, abortion or operation for hydatidiform mole, should be looked on with suspicion, and early diagnosis and early hysterectomy, in case of chorioepithelioma alone give hope. The induction of labor two weeks before term will often secure a relatively easy and safe birth for a child which otherwise would be lost. The improved methods of inducing labor at the proper time for the child to pass the given pelvis, and the low mortality of the Cesarean section, have largely reduced the number of cases in which craniotomy is considered justifiable. The operation of pubiotomy is still *sub judice*. A well trained man might repair a lacerated cervix immediately after labor, but a note of warning should be sounded, that the morbidity, if not the mortality, of the patient is markedly increased, and the old rule for the general practitioner is the good one, immediate trachelorrhaphy for hemorrhage only.

### Cesarean Section.

DR. EDWARD REYNOLDS, Boston, claimed that the mortality of Cesarean section varies greatly in accordance with the period of labor at which it is performed. That, 1, the mortality of the section late in labor is too great to permit of its performance in the interests of the child alone; 2, the maternal mortality of the section performed even so early as the end of the first stage of labor is greater than that of an ordinary high forceps delivery or version; 3, the mortality of the section done at the time of election in advance of labor, or at its very beginning, the primary section, is so low that it is a safer operation for both patients than difficult high forceps or version when performed for mechanical obstacles. His own experience with section now comprises 30 cases without mortality. He divided the cases into three classes—those done before labor, or primary; those done early in labor, or secondary; those done late in labor, or late sections. His completed tables contain 289 cases operated on by 20 different operators; of these 82 were primary, 158 secondary, and 49 late. The late cases showed a mortality of over 12 per cent.; the secondary cases, 4 per cent.; the primary cases, slightly over 1 per cent. He offers the proposition that: 1, A section undertaken under every surgical advantage in advance of labor is less dangerous than one performed after even a few hours' endurance of the exhausting physiology of labor, and under the technical conditions incident to such work; 2, that the section performed after a full test in labor has demonstrated the approaching failure of the natural forces is an operation favorable to the child, but more dangerous to the mother than the intrapelvic methods of extraction by high forceps or version. When Cesarean section is necessary, it is desirable that it should be determined on in advance, and performed as a primary operation. He ruled out secondary section as an operation of choice. To attain accurate results, one should estimate with equal care the pelvis, the passenger and the probable maternal power as a propelling engine. To estimate these in difficult cases it is usually necessary to see the patient repeatedly during and, when possible, before pregnancy.

#### DISCUSSION.

DR. WILLIAM M. POLK regretted that Dr. Cragin failed to tell of the advantages of slow forceps delivery. There has never been anything so potent for good as the obstetric forceps, but when used with a rush, for the purpose of terminating labor quickly, they are capable of danger which is not limited to the external passages, but they are responsible for the great number of cases of procidentia. The fact that forceps delivery could be extended over an hour or longer, until such a time as the uterus is coaxed to do its duty, seemed to him to be worthy of earnest consideration. He also emphasized the vast advantage of early and prompt incision and drainage in the cul-de-sac in cases of pelvic peritonitis associated with septic infection of the uterus.

DR. J. CLIFTON EDGAR agreed with Dr. Cragin in the main about the toxemias of pregnancy and was glad that he brought out the value of the nitrogen ratios as diagnostic factors. He believes that to-day the line can be drawn more sharply between the nephritic and hepatic cases of eclampsia. At the Manhattan Maternity Hospital the internes often make the diagnosis before urinary analysis. In institution work the mortality from puerperal sepsis is 0.1 per cent. or less. The morbidity is exceedingly low. This is not so in private practice. The reason for this diminution in the mortality and morbidity rate in institutions is due to the introduction of asepsis and antisepsis in midwifery.

DR. CHARLES JEWETT said that in toxemia of pregnancy, whether of the vomiting or eclamptic type, the general condition of the patient must still remain the principal guide in the treatment. Any material departure from the normal nitrogen ratios speaks for an unstable condition of the organism that might end in disaster. Eclampsia sometimes occurs explosively with scant clinical premonition. The end might come unexpected in pernicious vomiting. An elaborate analysis of the urine, at short intervals, during pregnancy in the latter months, and in all cases of pregnancy vomiting, might save many lives, but this requires the services of a practical chemist, which is expensive and not generally available. Pubic section, whether median or extramedian, has a limited field, which has grown more so with the improvement in the status of Cesarean section. It is difficult to select cases before labor which would probably fall within the scope of symphyseotomy or hebotomy. The principal objection to immediate suturing of the cervix is the danger of sepsis. The cervix is, perhaps, the seat of less resistance than other parts of the birth canal because of the traumatism it suffers even in spontaneous delivery. The cervix should not be sutured at the end of labor, except when necessary for hemostasis.

DR. GEORGE L. BRODHEAD said that cases would be met with, from time to time, in which the clinical picture suggested that the uterus be not emptied in spite of the fact that the urinary findings indicated the termination of pregnancy. They were becoming more and more accustomed to doing a craniotomy in the fore and after coming head in cases where the child was dead, rather than to subject the woman to difficult forceps or version. Lacerated cervices should only be repaired immediately after delivery in cases of hemorrhage. Cesarean

section might be done too often; many patients might be delivered at the eighth month safely and well. After Cesarean section the danger of rupture occurring at the site of the scar in subsequent labors should be borne in mind. Therefore, the induction of premature labor offers an advantage over Cesarean section.

DR. F. A. DORMAN emphasized the clinical evidences of toxemia so often overlooked by the general practitioner. The excretory and digestive functions, the circulatory system, the nervous manifestations, neuralgic or mental, should be investigated carefully. The operation of instrumental rotation of the head is a valuable method in occiput posterior positions and is increasing in usefulness. Rubber gloves should be used as a prophylactic measure. The induction of premature labor has a large field and very successful results might be obtained by starting labor and getting a smaller child.

DR. W. GILL WYLIE said that it has been his practice for over twenty-five years to make a close study of all these cases from the beginning, and it is amazing how often cases of toxemia and septic troubles can be averted.

## *Medicolegal*

### Evidence Against Abortionist.

The Supreme Court of New Jersey holds, in the case of State vs. Barnes, that in the trial of an indictment for the commission of an abortion, bottles of ergot and knitting needles found in the house of the defendant were admissible in evidence when it appeared that ergot and needles were sometimes used to produce miscarriages.

### Privilege Can Not be Waived by Contestant of Will.

The Supreme Court of Michigan says, in re Mansbach's estate, that it has held that privilege may be waived by the personal representatives of a deceased person. But it holds that it can not be waived by a contestant of a will, the latter not being a representative of the testator, but standing in the suit in the attitude of an adverse party. Such a one has no right to waive the statutory privilege.

### Malpractice May be Proved to Defeat Claims for Services.

The Supreme Court of Michigan says, in the case of Vandenberg vs. Slagh, that under proper pleadings, malpractice may be proven for the purpose of defeating a claim for services rendered by a physician or surgeon.

### Physician Allowed to Testify to Result of Examination Made for State—Identifying Subject.

The Supreme Court of Washington says that in the prosecution for rape, of State vs. Winnett, a physician was allowed to testify, over the defendant's objection, to the result of an examination made by him whereby he ascertained, and so testified, that the woman was in a family way. There was nothing here tending to show that the relation of physician and patient existed between them, or that any confidential relation whatever existed. The record did not indicate, but presumably, the examination was made at the instance of the state, and was made for the purpose of publishing the result of the examination. No confidential relation appeared to be violated. The case did not come within the spirit or reason of the law which prohibits physicians from giving information acquired in attending a patient, and no error was committed in admitting the testimony objected to.

But the defendant having married the woman, in consequence of which, as his wife, she could not testify against him, the court holds that it was error to have her brought in for the physician to identify as the woman whom he examined, where her condition as to pregnancy, which was a fact which the state sought to prove, could be observed and noted by the jury. It says that this might have been evidence of the most convincing and telling character, and being produced before the jury, just after the testimony of the physician in relation to her pregnancy, and the possible length of time which she had been in that condition—presumably six months—it would not be slanderous to impute to the jurors a careful scrutiny of the witness with a view of determining for themselves the probable correctness of the physician's diagnosis. It does not seem that it was at all necessary to parade her to the courtroom for the purpose suggested. The physician could have testified that he knew her, and that it was she whom he had examined, just as such identifications are ordinarily made.

### Rules as to Burden of Proof in Criminal Cases Where the Defense Is Insanity.

The Supreme Court of Wyoming says, in the homicide case of State vs. Pressler, that, in criminal cases, where the defense of insanity is interposed, three different rules as to the burden of proof of insanity have been adopted. In a few jurisdictions the rule is that the burden rests on the defendant to establish his insanity at the time of the commission of acts charged beyond reasonable doubt. This view has not met with much favor; the overwhelming weight of authority being against it.

Another rule, viz., that the burden is on the defendant to prove insanity by a preponderance of the evidence, has been adopted by the courts of last resort in many of the states, and was the one contended for by the attorneys for the state in this case, who cited in their brief cases from the states of Alabama, Arkansas, California, Georgia, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Missouri, Nevada, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Rhode Island, Utah, Virginia, Washington and West Virginia. In the states of Oregon and Louisiana the matter is regulated by statute.

The third rule, viz., that the burden of proving the sanity of the defendant rests on the prosecution, and that it must do so beyond a reasonable doubt in order to convict, or, in other words, if on all the evidence in the case the jury entertains a reasonable doubt as to the sanity of the defendant at the time of the commission of the act, it should acquit, is the rule adopted in the states of Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Kansas, Michigan, Mississippi, Montana, Nebraska, New Hampshire, New York, Tennessee and Wisconsin, and in the territories of New Mexico and Oklahoma, and also by the Supreme Court of the United States.

And this court holds that as sanity is the normal condition of the human mind, that condition is presumed, in the first instance, to exist, and has the force of evidence sufficient, if uncontradicted, to establish the sanity of the defendant. That is, it makes a prima facie case, and nothing more; and, when the right to a conviction is challenged by evidence in the case tending to show the insanity of the defendant at the time of the homicide, the burden does not shift, but still rests with the prosecution to show that the defendant was criminally responsible. That seems to be the most reasonable rule.

### Physician Employed by Company as Witness.

The Supreme Court of Colorado says, on the appeal of the Colorado Midland Railway Company vs. McGarry, a personal injury case brought by the latter party, that the company called as a witness a physician, and asked him concerning the plaintiff's condition at the time the physician made an examination of him, soon after the injury was inflicted. It appeared that this examination was made as the result of instructions to the witness from the company's chief surgeon. The plaintiff, refusing his consent, objected to this testimony on the ground that it was forbidden by the Colorado statute, which reads: "A physician or surgeon duly authorized to practice his profession under the laws of this state, shall not, without the consent of his patient, be examined as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient." The company claimed the evidence was competent because the witness was not employed by the plaintiff as a physician, and that the plaintiff at the time was not his patient. Counsel cited to this point Heath vs. Broadway & S. A. R. Co., 57 N. Y. Super. Ct. 496, 8 N. Y. Supp. 863, and 23 Am. & Eng. Cyc. Law (2d Ed.) 85. The court holds that the company's objection to a ruling excluding the offer was not tenable. It says

that the witness himself testified that he was commissioned by the company's chief surgeon to inquire into the plaintiff's injuries and to prescribe treatment where the family physician was not employed. What the physician found, as to the plaintiff's physical condition, must have been the result of the examination that was made in such circumstances. The statute applied and made the testimony incompetent. The authorities cited hold that, where a person responsible for an accident by which another is injured sends a physician employed and paid by him to attend the injured person, the rule of privilege applies. In the Heath case, the court adverted to the fact that the evidence there showed the object and purpose of the physician in examining the patient were to procure for the employer (the defendant company) information about the plaintiff's injury, and to elicit from her admissions as to the circumstances of the accident, and place the information thus procured at the disposal of the defendant company by whom he was employed. That was quite a different case from the one in hand. Here the witness was employed and paid by the defendant company to attend the plaintiff in a professional capacity and prescribe for him, and under the authorities cited, as well as the provisions of the statute, he was not permitted to give information, which he thus acquired, as to the plaintiff's physicial condition, without the consent of the patient.

### When Omission to Care for Another Resulting in Death Is Not Criminal.

The Supreme Court of Michigan says, in the case of People vs. Beardsley, that the law recognizes that under some circumstances the omission of a duty owed by one individual to another, where such omission results in the death of the one to whom the duty is owing, will make the other chargeable with manslaughter. But this rule of law is always based on the proposition that the duty neglected must be a legal duty, and not a mere moral obligation. It must be a duty imposed by law or by contract, and the omission to perform the duty must be the immediate and direct cause of death.

Although the literature on the subject is quite meager and the cases few, nevertheless the authorities are in harmony as to the relationship which must exist between the parties to create the duty, the omission of which establishes legal responsibility. Indeed, all of the adjudicated cases examined in this investigation the court finds are in entire harmony with the proposition first stated.

In the case before the court the defendant and a woman who had accompanied him to his rooms, spent from Saturday evening until Monday afternoon drinking together. Then she was observed to be taking some morphin tablets that she had sent out for, and the defendant had her removed to another party's room, where she afterward died. The state claimed that the facts and circumstances attending her death in the house of the defendant were such as to lay on him a duty to care for her, and the duty to take steps for her protection, the failure to take which was sufficient to constitute such an omission as would render him legally responsible for her death. But the court holds otherwise.

Seeking for a proper determination of the case by the application of the legal principles involved, the court says that it must eliminate from the case all consideration of mere moral obligation, and discover whether the defendant was under a legal duty toward the woman at the time of her death, knowing her to be in peril of her life, which required him to make all reasonable and proper effort to save her, the omission to perform which duty would make him responsible for her death. This was the important and determining question in the case.

It was urged by the prosecutor that the defendant "stood toward this woman for the time being in the place of her natural guardian and protector, and as such owed her a clear legal duty which he completely failed to perform." But the cases cited and digested in this case establish that no such legal duty is created based on a mere moral obligation. The fact that this woman was in his house created no such legal duty as exists in law and is due from a husband toward his wife, as seemed to be intimated by the prosecutor's brief. Such an inference would be very repugnant to our moral sense. The defendant had assumed either in fact or by implication no care or control over his companion.

Had this been a case where two men under like circumstances had voluntarily gone on a debauch together, and one had attempted suicide, no one would claim that this doctrine of legal duty could be invoked to hold the other criminally responsible for omitting to make effort to rescue his companion. How could the fact that in this case one of the parties was a woman change any principle of law applicable to it?

Deriving and applying the law in this case from the principle of decided cases, the court does not find that such legal duty as was contended for existed in fact or by implication on the part of the defendant toward the deceased, the omission of which involved criminal liability.

### Appointments to Public Health and Marine-Hospital Service.

United States Treasury Department Circular No. 6, dated Jan. 16, 1908, states that appointments may be made without examination in the following cases:

1. Local physicians employed for temporary duty as acting assistant surgeons. When, however, the duty ceases to be temporary, the place must be filled by transfer of a regular officer of the service, or through examination by the Civil Service Commission. Where the duties of an acting assistant surgeon require only a portion of his time, and compensation therefor does not exceed $300 per annum, appointments may be made without examination.

2. Quarantine attendants at stations at which, in the opinion of the commission, the establishment of registers is impracticable. This exception from examination applies to Fort Stanton and Key West, and to the Gulf, South Atlantic, Tampa Bay, Key West, Reedy Island, Cape Charles, Columbia River, San Francisco and Mobile Bay quarantines.

3. Quarantine attendants, acting assistant surgeons and sanitary inspectors, on quarantine vessels, or in camps or in stations established for quarantine purposes during epidemics of contagious diseases, employed for temporary duty in preventing the introduction or spread of contagious or infectious diseases.

Examinations are held by the Civil Service Commission for the positions of acting assistant surgeon and pharmacist third class.

---

## *Current Medical Literature*

### AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

#### Boston Medical and Surgical Journal.

*February 27.*

1 *The Bennett Fracture of the First Metacarpal Bone. Diagnosis and Treatment. S. Robinson, Boston.
2 *Treatment of Trophic Nerve Lesions; Study Based on a Case of Mal Perforans; of Ischemic Paralysis and of Erythromelalgia. W. C. Quinby, Boston.
3 Pulmonary Embolus Following Operative Interferences. C. G. Cumston, Boston.
4 *Psychology in Medicine. A. H. Ring, Arlington Heights, Mass.

1. **The Bennett Fracture.**—Robinson describes the Bennett or oblique fracture through the base of the first metacarpal bone and writes: 1. To correct the erroneous idea of some writers that the Bennett fracture is the most common fracture of this bone. 2. To emphasize the necessity of a radiograph of all fractures of the thumb, in order to determine whether or not the Bennett fracture is the one at hand. 3. To propose a form of treatment which seems imperative in cases of this particular fracture. He discusses the anatomy, pathology, clinical aspects, diagnosis and treatment, and sums up as follows: The first and fifth metacarpal bones are most frequently fractured; 64 per cent. of fractures of the first metacarpal are of a less obstinate transverse type; 28 per cent. are oblique fractures into the joint, with or without subluxation of the metacarpal (Bennett type).

2. **Trophic Nerve Lesions.**—Quinby advances the following conclusions. 1. The so-called trophic nerve lesions of

the skin, bones and joints are due to a break in what we have called, for convenience, the neurovascular mechanism of the part involved. 2. This break may be situated centrally, on the neural side, or on the vascular side. 3. Rational treatment of such conditions will be directed toward modification of (a) the blood supply; or (b) the nerve function of the part. 4. For modification of the blood supply, we have active and passive hyperemia increasing it, and positive pressure by bandaging, pneumatic cabinet or the immersion in mercury, decreasing it. 5. For modification of the nerve function, we have nerve stretching, neurolysis and nerve disassociation and electricity. 6. Nerve stretching is probably to be condemned, similar results being obtainable by the simpler passive hyperemia.

4. **Psychology in Medicine.**—Ring urges that physicians should become better acquainted with the exact meaning of psychologic terms with which to express the mental state of their patients. One is struck, in the average case record in a nerve clinic, by the fact that, while physical data are carefully detailed, the one item that would make the picture vivid and give it personality—a statement of the mental life—is omitted, or at most is put down as nervous, irritable, depressed, etc. He reproduces Kraepelin's analysis of dementia præcox to illustrate the proper application of the psychologic method.

### Medical Record, New York.

*February 29.*

5 *Chronic Sigmoiditis. H. Stern, New York.
6 Cardiac Hydrothorax. Report of Case Aspirated 311 Times. W. T. Gibb, New York.
7 *Acute Bulbar Paralysis with an Unusual Symptom. A. Gordon, Philadelphia.
8 Significant Features of Middle-Ear Suppuration in Infancy and Childhood. S. J. Kopetzky, New York.
9 *Dangers Attending Operative Intervention in Gonorrheal Salpingitis. J. S. Price, Beaumont, Texas.
10 Ether Anesthesia. D. Loree, Ann Arbor, Mich.

5. **Sigmoiditis.**—Stern discusses this condition at length, and, judging from his own experience only, concludes that inflammatory processes occur fully as often in the sigmoid flexure as in the cecal and appendicular regions. There is no question that the inflammatory condition may be limited to the sigmoid flexure, and we must logically assume that in some cases at least it may be idiopathic, though others may be the consequence of some pre-existing condition. Habitual obstipation and long-continued drug cathartics are the direct, inadequate or perverse nerve impulse in the descending or sigmoidal colon, the indirect, predisponents. Intestinal spasm, atony or paresis, by giving rise to obstipation, may be remote causes. Chronic sigmoiditis may be associated with numerous concomitants and complications. The causal indication for treatment is the regulation of functional activity of the sigmoid. Sigmoidal spasm is readily amenable to atropin, hypodermically, in doses of 1/100 grain (0.0006 gm.); less pronounced enterospasm often yields to prolonged administration of lupulin in daily doses of from 2 to 4 grams. Stern gives the following combinations:

| ℞. | gm. | | |
|---|---|---|---|
| Lupulini<br>Strontii bromidi .....ãã | 15 | or | gr. iiss |

Ft. caps. d. t. dos. No. 50.

Sig.: Two capsules from three to five times a day.

| ℞. | gm. | | |
|---|---|---|---|
| Lupulini ..... | 03 | or | gr. ½ |
| Pulvis ipecacuanhæ ..... | 02 | | gr. ⅓ |

Ft. caps. d. t. dos. No. xx.

Sig.: One capsule from four to six times a day.

Lupulin in suppositories is useful; strychnin and tonic medication he finds inefficient. Regulation of diet is the chief point. Preponderance of proteids leaves little residue and tends to obstipation; carbohydrates produce fermentation and consequently mucosal irritation. The best diet is one in which green vegetables and absorbable fats, like yolk of egg, predominate. Exercise is important—walking, calisthenics, gymnastics. Passive exercises he considers overrated; the best form is a strong, faradic, sinusoidal current. Hydrotherapy renders efficient service. For pain, opium should never be prescribed; hot applications and counterirritants and suppositories of belladonna, with lupulin in gram doses if tenesmus is present, may be used. Local treatment is imperative. The necessary reduction of peristalsis may be effected by belladonna, lupulin, valerian, viburnum, bromids, chloral, cannabis indica, etc. The sigmoid should be entirely evacuated by a high enema of warm soapsuds. Irrigations of fresh infusion of chamomile flowers, or sage (sage, 15 grams; boiling water, 500 c.c.), soothe the irritated mucosal surface. Very mild astringent irrigations (borax or boric acid, 2 per cent.; zinc sulphate, 1 in 1,000; lead acetate, 2 in 1,000, or aluminum acetotartrate, 10 in 1,000). Protective agents may be injected as an emulsion through a stiff catheter. Stern gives the two following prescriptions:

| ℞. | gm. | | |
|---|---|---|---|
| Menthol ..... | 2 | | gr. xv |
| Oil of eucalyptus..... | 20 | | ʒv |
| Bismuth subnitrate ..... | 12 | or | ʒiii |
| Glycerin ..... | 15 | | ʒss |
| Gum tragacanth and water q. s. .....ad | 60 | | ʒii |

| ℞. | gm. or c.c. | | |
|---|---|---|---|
| Oil of eucalyptus..... | 30 | | ʒi |
| Bismuth subnitrate ..... | 30 | | ʒi |
| Olive oil ..... | 15 | or | ʒss |
| Powdered gum acacia<br>Make emulsion.<br>Water enough to make..... | 60 | | ʒii |

7. **Acute Bulbar Paralysis.**—The evidences in Gordon's case clearly point to a bulbar affection. The unusual symptom is loss of speech, depriving the patient, a woman, of the power of even pronouncing letters, though she is able to emit sounds or syllables more or less resembling words. There is no interference with intelligence and no agraphia.

9. **Gonorrheal Salpingitis.**—Price reports a case of operation in which death, probably due to gonorrheal endocarditis, ensued without warning on the fifteenth day of what appeared to be an attack of acute rheumatism which began on the second day after operation. He calls attention to the likelihood of gonorrheal rheumatism being awakened by operation in specific infections.

### New York Medical Journal.

*February 29.*

11 *The After-Care of the Insane. F. Peterson, New York.
12 *Conservative Prostatectomy. F. Cabot, New York.
13. *Gastrointestinal Symptoms of Middle-Ear Suppuration. L. Fischer, New York.
14 *Indications for Surgical Intervention in Suppurating Middle-Ear Diseases of Infancy and Childhood. F. Cohn, New York.
15 *Present Status of the Etiology of Syphilis. R. C. Rosenberger, Philadelphia.
16 Case of Aortic Regurgitation and Floating Liver. E. P. Magruder, Washington, D. C.
17 *Orthopedic Therapy During the Early Stages of Acute Anterior Poliomyelitis. J. J. Nutt, New York.
18 Case of Biliary Fistula Between the Gall Bladder and the Stomach, with a Stone in the Hepatic Duct. G. M. Dorrance, Philadelphia.

11. **After-Care of Insane.**—Peterson points out that insanity is a protracted malady, and that convalescence and cure are matters of months or even of years. After return from hospital the patient feels like Rip Van Winkle, out of touch with all his surroundings, and moreover returns to a similar, or perhaps, harsher environment than that in which his mind first broke down. Peterson discusses the history of the movement for the after-care of the insane and proposes an association, comparable to the old English "Guild of Friends of the Infirm of Mind," to be composed of hospital physicians, local practitioners, lawyers, clergymen, business men, and their wives, whereby not only will the immediate objects of the care of these individuals benefit, but a knowledge of the predisposing conditions will be acquired, preventable causes will be recognized, and earlier treatment be instituted.

12. **Prostatectomy.**—Cabot divides prostatics into three groups: 1. Those beginning to show evidence of prostatic obstruction. 2. Those who have two or more ounces of residual urine, who are straining considerably, and who rise four or five times at night to empty the bladder. In these cases there is nearly always some enlargement of the prostate. 3. In the third group are those prostatics who can no longer be treated by palliative measures. In the first group no operation is

advisable unless there is an advance in the obstruction, but in the latter event early operation is conservative. In the second group there is usually cystitis and often a secondary pyelitis. In rare cases palliative treatment will result with great care, in long life and comparative comfort for the patient; but usually such patients pass quickly into the third stage. Here a complete prostatectomy is almost sure to be followed by death. Cabot follows Lilienthal's two-stage operation in all cases in which the patient's resistive power is doubtful, using the suprapubic route. The results are good and the mortality is comparatively low and on the decrease. As to the sexual power, he has had complaint in only one case out of seventy-two.

13. **Gastrointestinal Symptoms of Middle-Ear Disease.**—Fischer points out that one is apt to look no further than the alimentary canal to explain vomiting or diarrhea with fever in children. In several diseases, however, there is a liability to intestinal symptoms, e. g., in scarlet fever during the preeruptive stage, in tuberculous meningitis and in infection of the middle ear due to the streptococcus or the pneumococcus. Children swallow secretions from the nasopharynx. He shows how easily bacteria can penetrate from the mouth into the middle ear, and discusses the gastrointestinal manifestations of middle-ear trouble in breast-fed and bottle-fed infants respectively.

14. **Middle-Ear Diseases.**—Cohn gives the following indications for paracentesis: 1. It is indicated in every form of perforative inflammation. 2. It is not indicated in the nonperforative form. 3. It should be performed in every doubtful case in which distinction is impossible or difficult. 4. It should not be performed too early; one should wait until the symptoms demand it. He repeats his indications for perforating the mastoid, as published by him in the same journal, Aug. 8, 1896.

15. **Spirochæta Pallida.**—Rosenberger gives an exhaustive résumé of the literature on the morphology of the *Spirochæta pallida*, its occurrence in the lesions of syphilis, the technic, inoculation experiments on animals, and its cultivation. This shows that by far the majority of observers regard the spirochete as the probable cause of syphilis, of which Rosenberger's personal observations convince him also. When stained by the Levaditi method there should be no mistake possible for anyone with any histologic training. It must be borne in mind that local or general treatment diminishes the number of parasites.

17. **Orthopedics in Poliomyelitis.**—Nutt believes that proper and painstaking orthopedic treatment, instituted during the more acute stage, will greatly lessen the exent of the crippling results, and that in some cases it will be the means of effecting a complete cure. The treatment before the chronic stage should be directed toward: 1. Keeping the parts in as healthy a condition as possible. 2. The preservation of the normal range of motion of the joint, and 3. The prevention of stretching and elongation of paralyzed and weakened tissues. The first end may be accomplished by massage, electricity, heat and hydrotherapy. The second is attained by passive movements. The third can be effected by keeping the ends of the dorsal extensors of the foot approximated, as well as those of any other muscles threatened, such as the peronei, the tibialis anticus alone, or the deltoid. He reports cases showing the importance of preventing overstretching of paralyzed muscles.

## Archives of Diagnosis, New York.

*January.*

19 *Diagnosis and Prognosis of Mitral Stenosis and of Aortic Stenosis. D. Rochester, Buffalo.
20 *Relative Importance of Symptomatic and Physiologic Diagnosis in Neurology. L. H. Mettler, Chicago.
21 *Grocco's Sign in Pleurisy with Effusion. T. F. Reilly, New York.
22 *Diagnosis of Pleuritis. M. Hartwig, Buffalo.
23 Diagnosis of Acute Catarrhal Cholecystitis. H. W. Bettman, Cincinnati.
24 *Etiology of Epidemic Poliomyelitis. W. Sinkler, Philadelphia.
25 *Diagnosis of Extrauterine Pregnancy. H. J. Boldt, New York.
26 Case of Meckel's Diverticulum Causing Obstruction of the Bowels. J. H. Carstens, Detroit.
27 Diagnosis of Polycystic Kidney in Adults. C. G. Cumston, Boston.
28 *Diagnosis of Abnormalities and Diseases of the Ureters. F.
29 *Differential Diagnosis of the Ulcerative Forms of Cutaneous Syphilis and Tuberculosis. A. Ravogli, Cincinnati.
30 Diagnosis of Chronic Inflammation of the Nasal Accessory Sinuses. S. Oppenheimer, New York.

19. **Mitral and Aortic Stenosis.**—Rochester considers it unfortunate that among physicians generally so little attention is paid to the differentiation of valvular lesions of the heart. One commonly hears it said: "There is mitral disease," or, "There is an endocardial murmur, but I don't pretend to differentiate those sounds." A man who does not attempt to differentiate the murmurs has no right to attempt the practice of general medicine. The diagnosis of the different lesions is most important, as regards both prognosis and treatment. He discusses in detail the symptoms and signs by which the diagnosis of mitral stenosis might be made, and points out the morbid conditions present on which prognosis must depend. The diagnosis of aortic stenosis is considered in like manner.

20. **Diagnosis.**—Mettler insists on the great superiority, the positive necessity, of employing the physiologic method of diagnosis instead of the merely symptomatic, based on mere observation and grouping of symptoms, which he considers primitive, unscientific and dangerous. To give value to the symptoms as the indicators of a given disease they must severally and collectively be minutely analyzed and fully accounted for on modern physiopathologic and psychophysiologic grounds, for which the present knowledge of biology, psychology and physiology is surprisingly adequate. With regard to diseases of the nervous system, a branch second only to ophthalmology in scientific clearness and deductive accuracy, more study of the works of physiology and physiologic psychology—he had almost said less study of the works of mere clinical neurology—is what is needed in the profession to-day.

21. **Grocco's Sign in Pleurisy.**—Reilly considers that the value of this sign is not appreciated. He describes its character and determination and discusses its causation. Aside from its value in differentiating a pleurisy from an unresolved pneumonia, he has found it of signal service in the diagnosis of purulent effusion.

22. **Pleuritis.**—Hartwig says that exudative pleuritis is frequently unrecognized in its early stages, even by experienced physicians, which fact he attributes to the unsound text-book doctrine, that liquid interposed between chest wall and pleura being a poor sound conductor must necessarily reduce the intensity of respiratory noises. The most reliable early symptom of exudative pleuritis he considers to be obliteration of the intercostal depressions. The diagnosis, however, should never be based on one symptom alone, but on the totality of symptoms, with the history of the present illness. He reports an illustrative case.

24. **Epidemic Poliomyetlitis.**—Sinkler produces an analysis of 274 additional cases, making a total of 509 with those already reported, which tend to support his conclusion (*American Jour. Med. Sciences*, April, 1875) that a large majority of cases of poliomyelitis occurs during the summer months. In his series of 509, 418, or 82 per cent., occurred between June and October. The nature and progress of the disease indicate that it is clearly due to infection by a micro-organism developed during hot weather, and he refers to the fact that in an epidemic in Vermont in 1894 horses and birds were also affected.

25. Abstracted in THE JOURNAL, Jan. 18, 1908, page 233.

28. **Diseases of the Ureters.**—Johnson reports cases and states that the dominant suggestion from the study of them is that, when a patient appears with a history and a localization of pain similar to those described, and when ordinary methods of treatment fail, it becomes our duty to make a thorough cystoscopic examination and to ascertain the exact condition of the ureters and kidneys. It is probable that ureteral lesions and pelvic inflammations are far more common than has hitherto been supposed.

29. **Ulcerative Cutaneous Syphilis and Tuberculosis.**—Ravogli discusses the differentiation between tuberculous and syphilitic cutaneous ulcers, and calls attention to the fact that syphilis and tuberculosis often occur together, and that they have a mutually deleterious action the one on the other.

### Indiana State Journal of Medicine, Fort Wayne.

*February.*

31 Direct Laryngoscopy and Tracheobronchoscopy. J. J. Kyle, Indianapolis.
32 *Diagnosis of Intestinal Obstruction. E. Walker, Evansville.
33 Surgery of Gall-stone Disease. T. B. Eastman, Indianapolis.
34 Report of a Series of Leukemic Cases: Symptomatology and Treatment. F. B. Wynn, Indianapolis.

32. **Intestinal Obstruction.**—Walker says that in all cases in which pain, vomiting, corprostasis and meteorism are the symptoms we should be on the lookout for mechanical obstruction. He discusses in detail each of these symptoms, cautions against the repeated use of purgatives, and against masking the pain by morphin, as well as against the error of undue delay in the effort to make an exact anatomic and pathologic diagnosis, which is often impossible. One is rarely justified in waiting more than from six to twelve hours. Hernia must, of course, be looked out for. The all-essential point is the earliest possible diagnosis of the obstruction followed by prompt surgical intervention.

### Vermont Medical Monthly, Burlington.

*February.*

35 Control of the Lymphatics in Infections of the Extremities. H. L. Burrell, Boston.
36 *Intestinal Obstruction. L. Allen, Burlington.
37 Address at Annual Banquet of the University of Vermont Alumni, Boston. H. C. Tinkham, Burlington.

36. **Intestinal Obstruction.**—Allen sums up the treatment of intestinal obstruction as follows: In all mechanical ileus operate. Never try cathartics. In early dynamic ileus or the distension so often seen after laparotomy, use stomach and rectal irrigation, saline solution, and cathartic enemata. This condition is probably due to slight peritoneal infection or trauma. Eserin, atropin and morphin (sometimes) are indicated. Operation, if done, must be with the idea of removing some definite, local, septic focus.

### Washington Medical Annals.

*January.*

38 Philosophic Foundations of Charlatanry in Medicine. D. K. Shute, Washington.
39 Case of Typhoid with Diphtheria in a Child. S. S. Adams, Washington.
40 Cauterization of Pterygium. F. B. Loring, Washington.
41 Sexual Differences in Skull and Other Parts of Skeleton. A. Hrdlicka, Washington.
42 Review of Internal Medicine. W. W. Wilkinson, Washington.
43 Case of Infectious Cerebrospinal Meningitis. J. D. Morgan, Washington.
44 Progress of Neurology. D. P. Hickling, Washington.
45 Experience with Hyoscin, Morphin and Strychnin as a Surgical Narcotic. W. A. Jack, Jr., Washington.
46 Case of Calculus of Ureter. G. T. Vaughan, Washington.
47 Case of Aneurism of Aorta. F. E. Harrington, Washington.
48 Etiology of Chorea. J. S. Wall, Washington.
49 *Annual Report of the Committee on Public Health, December, 1907.

49. **Annual Report of the Committee on Public Health.**—The principal object of this report, which is based on the mortality statistics of scarlet fever, diphtheria and measles in ten American and six European cities, is to determine whether or not municipal quarantine has reduced the mortality from these diseases. The conclusions arrived at are in brief that there has been a marked decrease in mortality from scarlet fever, diphtheria and measles, for the most part since the introduction of antitoxin and the establishment of municipal quarantine. The mortality of diphtheria, which for the last ten years shows an average decrease of 36.6 per cent. for sixteen cities, can be best accounted for on the theory that it is due to the antitoxin treatment. The average reduction of mortality in measles for the same period and cities, 27.4 per cent., can best be accounted for on the theory that it has been brought about by the measures employed by private physicians and the people on their own account. In scarlet fever the mortality reduction, which under the same conditions has an average of 47.9 per cent., may be attributed perhaps one-half to municipal quarantine, the remainder to the measures of physicians and people. While somewhat disappointing, the showing of municipal quarantine justifies the continuance of the service and its extension to include measles, provided unreasonable and unnecessary measures, which engender prejudice and opposition can be eliminated. The placarding of houses is chief of these measures, and as effective quarantine can only be enforced by careful supervision and health authorities, it would be a gain to let such supervision entirely supersede placarding, the feasibility of which omission is shown in New York and European cities. The laws and regulations must be adjusted to meet the requirements for each particular disease. The European, and some American, showing justifies quarantine hospitals for those who can not be properly isolated and cared for at home. The inadequacy of terminal disinfection requires that it should be either replaced or supplemented by the maintenance of absolute and constant disinfection throughout the entire course of the disease until all possibility of infection is known to be over. The report is liberally illustrated with charts and explanatory tables.

### Long Island Medical Journal.

*January.*

50 Marital Maladjustment; the Business of Preventive Gynecology. R. L. Dickinson, Brooklyn, N. Y.
51 *Sources of the Contamination of the Air in New York City. D. D. Jackson, Brooklyn, N. Y.
52 Cholecystitis in Typhoid. M. Figueira, Brooklyn, N. Y.
53 *Sudden Death. W. N. Belcher, Brooklyn, N. Y.
54 Control of Social Disease. N. P. Rathbun, Brooklyn, N. Y.

51. **Contamination of the Air in New York.**—Jackson discusses the dangers of excessive or contaminated dust, the constituents of street dust, and the smoke nuisance. He then proceeds to a consideration of infection from flies, the substance of which is contained in a report which was discussed editorially in THE JOURNAL, Jan. 18, 1908, page 210.

53. **Sudden Death.**—Belcher investigates the causes and conditions of sudden death, particularly with reference to the findings of the coroner for the Middlesex district of London, and draws the following conclusions: Sudden death is of frequent occurrence; too frequent. Changes and conditions in the vascular system are responsible for nearly 90 per cent. of all sudden deaths from natural causes. No matter where we trace the source of the trouble, we come back to the vascular system as the responsible factor. Sudden death can be explained in many cases. In others it is very largely a matter of conjecture; and in none can it ever be satisfactorily explained without autopsy. Many of these sudden deaths, although absolutely unavoidable, are often thought to be preventable by the great non-medical public. It is the duty of the physician to safeguard his patient, so far as may be possible, against this accident, by a careful estimate of the case at hand by every known method of diagnostic procedure. So-called sentiment should never be allowed to stand in the way of the investigation into the cause of death by postmortem examination, in all cases in which death is sudden and wholly unexpected.

### Northwestern Lancet, Minneapolis.

*February 1.*

55 *Rocky Mountain Spotted Fever. W. M. Chowning, Minneapolis.
56 Practical Suggestive Therapeutics. A. E. Clough, Madison, S. D.
57 Diseases in Which Frequency and Pain in Urination Are Prominent Symptoms, with Suggestions as to the Diagnostic Technic. A. W. Abbott, Minneapolis.

55. **Rocky Mountain Spotted Fever.**—Chowning refers to a statement in the *Journal of Infectious Diseases* (Vol. I, No. 1, page 44), to the effect that in the blood in seventeen cases of this disease no bacteria were found. A study of the material from these cases, however, shows that organisms apparently of plant life are present in eight of them. He describes the technic of examination and the morphology of the clumps, and gives a preliminary note on beerwort as a culture medium.

### Laryngoscope, St. Louis.

*December.*

58 *Tuberculosis of the Mouth. R. Levy, Denver.
59 *The Tonsils and Their Relation to the Development of Tuberculosis. E. Danziger, New York.
60 Etiology of Tuberculosis of the Upper Respiratory Tract. G. B. Wood, Philadelphia.
61 *Baneful Influence of Pregnancy on Laryngeal Tuberculosis. W. Freudenthal, New York.
62 *Tuberculosis of the Larynx and Pregnancy. A. Kuttner, Berlin, Germany.
63 Histologic Examination of a Window Resected Septum. J. C. Beck, Chicago.

58. This article was published in *Denver Medical Times*, December, 1907, and abstracted in THE JOURNAL, Feb. 15, 1908, page 563. The present publication, however, adds eleven colored plates.

59. **The Tonsils and Tuberculosis.**—Danziger's investigations show that acute tonsillar tuberculosis is found as a part of miliary tuberculosis or as a mestatic process in the last stage of pulmonary tuberculosis. It is accompanied by severe symptoms. The chronic form, however, is nearly always latent and without symptoms, and may be either primary or secondary, the secondary infection taking place through the sputum. The absence of severe symptoms is probably due in secondary cases to a certain degree of immunity from pre-existent pulmonary tuberculosis. In primary chronic tuberculosis as soon as the pharyngeal tonsil is enlarged enough to make nasal respiration impossible, mouth breathing adds its dangers to those of food harboring tubercle bacilli. Infection may travel from the tonsils to the cervical and bronchial glands, or may reach the lymph current and through the general circulation cause miliary tuberculosis. Remembering the possibility of primary tuberculosis of the tonsils, we should not be satisfied with removing tuberculous cervical glands, but after excluding pulmonary disease, should examine the tonsils and remove them radically if necessary.

61. **Pregnancy and Laryngeal Tuberculosis.**—Freudenthal considers pregnancy in relation to those cases of laryngeal tuberculosis associated with pulmonary affection. While it is impossible to assert that pregnancy influences the incidence of laryngeal tuberculosis in those with pulmonary tuberculosis, it must be positively affirmed that it has a deleterious effect on laryngeal tuberculosis already established. He discusses the effect on both the child and the mother, and reports cases to show that early interruption of pregnancy may save the mother, the percentage of deaths if pregnancy is not interrupted amounting really to 100, and the children almost invariably die anyway. On the other hand, a relative cure of the tuberculosis is reported in two cases after the induction of premature labor. The rule is: If the case is seen early, immediate interruption in the interest of the mother. If seen late, wait in the interest of the child.

62. **Id.**—Kuttner's considerations lead him to practically the same conclusions as those of Freudenthal cited above.

### Northwest Medicine, Seattle.

*January.*

64 *Effects of Back-Pressure on the Bladder. G. S. Peterkin, Seattle.
65 *Diagnosis of Kidney Functions. H. P. Marshall, Pullman, Wash.
66 *Hyperchlorhydria. F. H. Brandt, Boise, Idaho.

*February.*

67 Treatment of Partial Optic and Retinal Atrophy by Electricity and Massage. H. V. Würdemann, Milwaukee, Wis.
68 Acute Pancreatitis. E. F. Pope, Spokane.
69 Where Medicine and Surgery Meet in Diseases of the Stomach. W. V. Gulick, Tacoma.
70 Treatment of Acne Vulgaris. L. H. Redon, Seattle.

64. **Back Pressure on the Bladder.**—Peterkin discusses in detail the *modus operandi* of the effects of urinary back pressure on the bladder. The probable involvement of the bladder in continued inflammatory conditions of the seminal vessels must not be overlooked, and irrigation should accompany massage or other treatment, not only as a remedy but as an aseptic precaution. The bladder of any patient may be irrigated without harm in view of the fact that it is automatic in action. The lining membrane, when intact, has no power of secretion or absorption; therefore, irrigation by hydrostatic pressure *à la* Jendt with catheter is not contraindicated in the sense that it is dangerous, because it may carry infection into the bladder. Absorption commences only when the lining membrane is broken, so that great gentleness in instrumentation is required and since the invention of the cystoscope, stone searchers, etc., are antiquated. Peterkin shows how the pathologic changes that take place as the result of continued distension may result in a sacculation of the lining membrane, forming so many pockets for residual urine. In the diagnosis of stricture the metal sound should never be used, for being of uniform caliber it will prevent the diagnostic feeling of resistance on withdrawal. Moreover, in the case of a moderate obstruction, especially in the bulbo-membranous portion, in consequence of the compensating expansion of the unaffected membrane, it will often pass without detection of an existing stricture. The condemnation of the cystoscope shows inefficiency in its employment. Finally, Peterkin urges the importance of thorough examination, not only physical with instruments, but, as to family and personal history, general condition, subjective and objective symptoms (the patient being stripped), abdominal percussion, external genitals and rectum, and the three glass method for the examination of the urine microscopically, macroscopically and chemically.

65. **Kidney Functions.**—Marshall concludes that the perversion of renal functions may have a physical, chemical or morphologic basis. Hence function, not microscopic appearances, should be recognized. Albuminuria and cylindruria may be present without nephritis and vice versa. Visceral symptoms and the physical characteristics of the urine are the principal aids in arriving at a functional diagnosis; and, finally, he considers it worse than absurd to send a specimen of urine to a urologist for diagnosis. All that the clinician can expect is a report of the findings, while the clinician, knowing the history and physical condition of the patient, must estimate the functional capacity of the kidney.

66. Abstracted in THE JOURNAL, Dec. 7, 1907, page 1946.

### Western Medical Review, Omaha.

*January.*

71 *Treatment of Cholelithiasis. W. O. Bridges, Omaha.
72 Points Concerning Stomach Surgery. B. B. Davis, Omaha.
73 Puerperal Eclampsia. A. E. Mack, Omaha.
74 Id. F. A. Butler, Harvard, Neb.

71. **Cholelithiasis.**—Bridges discusses gallstones, particularly in reference to the question of surgical intervention. He does not agree with those who say that gallstones should be operated on when recognized, thus saving time, suffering and danger. He disclaims disparaging the most brilliant triumphs of gall-bladder surgery, but protests against the dictum that every patient with cholelithiasis should be operated on. He commends and reproduces Kehr's indications for gallstone operation, and criticises the surgeon who operates in a gallstone case and discharges his patient in two or three weeks as cured, without instructions or reference to his attendant physician for subsequent care and observation. In the medical treatment of gallstones so-called specific remedies are usually disappointing. Whatever good effects they may have are produced, not by dissolving calculi, but by relieving congestion and reducing infection and the tendency to bile stagnation. The salicylates occupy first place. He has seen no benefit from olive oil. His best results have come from salicylic acid 2 grains (0.13 grams); acid oleate of sodium, 1 grain (0.065 grams), and phenolphthalein, 1 grain (0.65 grams) in capsules, two after each morning and evening meal. In congestion with enlargement, marked duodenal catarrh, ammonium chlorid in 10 grain (0.65 gram) doses, twice or three times daily is recommended. The treatment outlined for the attack is recommended as a postoperative treatment.

### Detroit Medical Journal.

*January.*

75 *Unsettled Questions in the Treatment of Hare-lip and Cleft Palate. T. A. McGraw, Detroit.
76 Action of Strychnin. W. J. Wilson, Jr., Detroit.
77 Diseases of the Rectum and Intestinal Tract, with Report of Cases. J. A. MacMillan, Detroit.

75. **Hare-lip and Cleft Palate.**—McGraw considers the time when operative measures should be undertaken, the kind of operation to be employed, the relative order and sequence when several operations are required, the causes of failure, the methods of anesthetization, the nature of the suture material, and the after-treatment. He weighs the arguments for and against in each case. In the milder uncomplicated cases of harelip operation may be done after the third week of life; in the severer cases, after the second or third month. When cleft palate is present the sequence of the various operations will have to be taken into consideration. When the cut surfaces are beveled in opposite directions the resulting scar will be less irregular than when cuts are made perpendicularly to the skin surface. Horsehair only should be used on the cutaneous surface, to avoid scar. Tension sutures, which are sometimes necessary, should have their entrance and exit in the mucous

membrane and pass through the entire thickness of the lip except only the integument; they may be tied over small lead or silver plates perforated for the purpose. The cutaneous wound should be exposed to air for several hours to permit escape of serum, then coated with collodion. Success depends on prevention of hemorrhage, and this is accomplished by operating slowly and attending at once to every bleeding point. The head should be lowered not only to prevent the swallowing of blood, but to make the surgeon aware of the extent of bleeding. The essential of after-treatment is rest, for which opiates should be given if necessary. McGraw thinks it unfortunate that the prevalent opinion of the medical profession, that clefts of the palate may not be closed until the child is several years of age, is so firmly fixed. There should be a determined effort to cure these children in infancy, and he feels confident that our methods may be so improved as to warrant very early operations if only we can attain to the necessary experience. He considers that the Brophy operation has come to stay. For suture material he approves of metallic sutures to relieve tension with fine sutures of iron-dyed silk to secure union of the cut edges. In the after-treatment he lays particular stress on the necessity of avoiding nervous disturbance in children of nervous temperament. No general rule can be adopted in regard to the indications of absolute rest, avoidance of sepsis, and comfort and good health of patient, because they are not always compatible among themselves. Frequent douching of the mouth and nostrils, for instance, while undoubtedly serviceable, is not always necessary and incidentally may do more harm than it does good directly.

### United States Naval Medical Bulletin, Washington.

*January.*

78 *Preliminary Report on Gangosa and Allied Diseases in Guam. A. J. Geiger, U. S. Navy.
79 Hypertrophic Arthritis of the Spine. H. W. Smith, U. S. Navy.
80 Beriberi at the United States Naval Hospital, Norfolk, Va. O. J. Mink and R. C. Holcomb, U. S. Navy.
81 *Guha (epidemic bronchial asthma, Guam). F. E. McCullough, U. S. Navy.
82 Patients Burned in Accident on U. S. S. "*Georgia*." W. H. Bucher, U. S. Navy.
83 Case of Psychical Aphonia. J. L. Belknap, U. S. Navy.
84 Case of Ruptured Kidney. E. Thompson, U. S. Navy.
85 Case of Dementia Præcox. S. H. Dickson, U. S. Navy.
86 Case of Abscess on the Diaphragmatic Pleura During an Attack of Malaria. B. F. Jenness, U. S. Navy.
87 Case of Hernia with Appendix Adherent to Sac. R. C. Holcomb, U. S. Navy.

78. **Gangosa.**—Geiger divides the ulcerations of the upper portion of the respiratory tract, which are common in Guam, into three groups: 1. Ulcerations that yield readily to antiseptic treatment. These are all due to ordinary pus organisms, principally the *Bacillus pyocyaneus*. 2. Ulcerations that yield slowly to antiseptic treatment. This group covers a large percentage of the cases and to it the term gangosa should be limited. He describes the mortality, staining properties, culture characteristics and pathogenesis of an organism found present in all active cases and believed to be the etiologic factor for the following reasons: (a) The organism has been found in every case examined in which the disease was still active. (b) In acute cases, in which the conjunctivæ are involved by extension of the disease, the organisms are generally found in pure culture in the conjunctival sac. If a case with extensive ulceration be treated for several days with antiseptics, a large portion of the ulcerating surface will present healthy granulations and begin to heal. Small areas, however, will often be found which continue actively ulcerating. In many instances bone destruction will be going on at these points. The organisms can invariably be found at these points until all active ulceration ceases. Healing sometimes proceeds over an ulcerating surface, leaving here and there a wart-like projection. After an interval of time this breaks down, leaving a very small ulcer. If just before it breaks down completely the surface is removed with antiseptic precautions the organism is found in pure culture in the pus thus obtained. Sections from these wart-like projections often reveal the organisms in groups just beneath the epithelium. The organism closely resembles the *Bacillus diphtheriæ*, from which it is doubtful if it can be distinguished. 3. Ulcerations that are only modified by antiseptic treatment. This group is characterized by the formation of distinct tubercles or nodules, which may involve the skin or mucous membrane of the nose, soft palate, pharynx, larynx, or lips. He describes an organism constantly associated with the disease and believed to be the etiologic factor. A consideration of this disease from all its aspects leaves no doubt that it is rhinoscleroma.

81. **Guha.**—McCullough gives further notes of the recent epidemic of a disease described by Freeman in the July number of the *Bulletin*, consisting of a septicemia epidemic, and characterized by hemorrhagic infarction of the lungs, intestinal ulceration, cloudy swelling of the parenchymatous organs, and enlargements of the mesenteric and mediastinal lymph nodes. The intial symptoms occur either in the lungs (pneumonic type) or intestinal tract (enteric type). In the primarily pneumonic type the enteric symptoms never become the more prominent, and vice versa. The course of the pneumonic type is sharply defined from bronchial asthma in the following respects: 1. The number of respirations is considerably increased. 2. There is continued fever. 3. The amount of expansion is not so disproportionate to the respiratory movements. 4. Inspiration is not so short and quick and expiration is not so prolonged. 5. The percussion note has not the same hyper-resonant quality. 6. Paroxysms subside gradually, never suddenly. The treatment is symptomatic.

### Yale Medical Journal.

*January.*

88 Laryngeal Tuberculosis. F. S. Crossfield, Hartford, Conn.
89 *Toxic Amblyopia. E. M. Blake, New Haven, Conn.
90 *Diagnosis of Tumors of the Bladder. H. Binney, Boston.
91 Diagnosis and Treatment of Psoriasis. M. S. Bradley, Hartford, Conn.
92 Split Proteid in Infant Feeding. W. G. Murphy, Hartford, Conn.

89. **Toxic Amblyopia.**—According to Blake, quinin, methyl alcohol, lead, arsenic, stramonium, cannabis indica, coffee and other substances may produce toxic amblyopia, but he confines his paper to the effects of tobacco and alcohol, which are answerable for a large percentage of cases. He describes the ophthalmic conditions and the methods of induction of the disease. The condition is more common in those who use tobacco only than in those who use alcohol only; whence Blake regards tobacco as the more potent etiologic factor, though most persons affected use both. It has not been definitely proved that nicotin or some of its by-products and alcohol exert a specific action on the nervous structure, though it is a matter of reasonable induction. If the patient is seen before the pallor of the discs sets in (due first to anemia and later to atrophy of nerve) restoration of sight practically to normal may be expected. With an atrophic nerve the prognosis is less good, but better vision may be expected on withdrawal of the poison. Absolute blindness never results. Complete stoppage of tobacco and alcohol in mild cases suffices for a cure. Potassium iodid, with Turkish baths and regulation of diet, may aid elimination; the iodid may be continued as an alterative when improvements ceases. Strychnin in ascending doses may be used with great advantage. The use of the eyes for close work should be prohibited. Three cases are reported.

90. **Tumors of the Bladder.**—Binney says that in the adult the clinical picture of bladder tumors in an early stage resembles that of other bladder or kidney conditions so closely that an absolute differential diagnosis can not be made by ordinary methods. While unnecessary, and possibly harmful, in very advanced cases of cancerous infiltration, and less important in those rare cases in which large fragments of the tumor are passed, affording material for pathologic examination, cystoscopy should always be resorted to in early or suspected cases. By this means only can the presence of tumor be determined in many cases, while in those in which the evidence is more complete, not only is the clinical diagnosis confirmed in the most brilliant way, but data of the greatest importance as to prognosis and treatment are obtained.

### American Journal of Surgery, New York.

*February.*

93 When Shall We Operate in Ulcer of the Stomach? F. Torek, New York.
94 Diagnosis of Malignant Tumors of the Bladder. L. Heitzmann, New York.
95 Traumata of the Kidney. W. B. Crawford, Savannah, Ga.

96 *Hemorrhoids and Their Treatment. M. Iverson, Stoughton, Wis.
97 Successful Treatment of Tuberculous Glands, Facial Acne, and Skin Cancer by the *x*-Ray. W. S. Lawrence, Memphis, Tenn.
98 Blood Examination in Surgical Diagnosis (to be continued). I. S. Wile, New York.
99 *Removal of the Whole or a Part of the Humerus. E. M. Sala, Davenport, Iowa.
100 Rupture of the Uterus, Escape of Fetus into Abdominal Cavity; Operation and Recovery. A. P. Hanle, Hartwell, Ga.

96. **Hemorrhoids.**—Iverson discusses the various methods of treatment and concludes that of the useful methods of operation on hemorrhoids the injection cure is unsurgical and a parallel to the "patent-medicine" man's "repeater," except if accompanied with a dilatation of the sphincters under full narcosis. If we use full narcosis and dilatation, we had better employ at the same time the most surgical procedure—the plainest—of cutting the piles away and sewing up the wounds.

99. Abstracted in THE JOURNAL, Jan. 25, 1908, p. 309.

### Atlanta Journal-Record of Medicine.

*January.*

101 How to Prevent the Spread of Contagious Diseases. S. A. Visanska, Atlanta.
102 Typhoid. W. A. Mathews, Hawkinsville, Ga.
103 Strangulated Inguinal Hernia in Infant. J. E. Cannaday, Hansford, W. Va.
104 Perforating Ulcer of the Foot. M. G. Campbell, Atlanta.
105 Review of Modern Treatment of Gonorrhea. C. W. Canan, Orkney Springs, Va.
106 Medicinal Effects of Indian Spring Water on Typhoid Fever. A. F. White, Flovilla, Ga.

### Ophthalmic Record, Chicago.

*January.*

107 Clinical Appearances and Treatment of Infection with Morax-Axenfeld Diplobacillus. F. C. Todd, Minneapolis.
108 Case of Belladonna Poisoning. W. Eberhardt, Michigan City, Ind.
109 A Knife Guard to Aid in Tarsal Subsection. A. E. Ewing, St. Louis.
110 The Eye and the Pelvis. C. P. Franklin, Philadelphia.
111 *Case of Ophthalmia Neonatorum Followed by Pyemia and Death. F. N. Lewis, New York.

111. **Fatal Ophthalmia Neonatorum.**—Lewis reports the case of a baby, in which both the father and the mother had acute gonorrhea at the time of its birth, and in which apparently the absorption of pus into the general circulation from the ocular conjunctiva took place, causing pyemia and subsequent death. The ophthalmia was treated in the usual manner at once, so that on the tenth day after admission both eyes were normal and the pathologist reported a negative result from examination of the ocular secretion. Nevertheless, abscesses over external malleolus, at the left elbow and in the wrists, were found, the pus from which showed gonococci. The child died three weeks after admission.

### California State Journal of Medicine, San Francisco.

*January.*

112 *The Rat and His Parasites in the Spread of Disease, Especially Bubonic Plague. B. J. Lloyd, U. S. Public Health and Marine-Hospital Service.
113 Continuance of Plague in San Francisco. W. C. Hassler, San Francisco.
114 Amputation Below the Knee. A. M. Henderson, Sacramento.
115 Replacing of Bone and Cartilage of the Septum After Its Submucous Resection. E. C. Sewall, San Francisco.
116 Cases of Head Injury. O. D. Hamlin, Oakland.
117 Medicinal Treatment of Myocarditis. W. W. Kerr, San Francisco.
118 Treatment of Hip-Joint Disease. W. Le M. Wills, Los Angeles.
119 Indications of Cesarean Section. A. B. Spalding, San Francisco.
120 Filling of Bone Cavities. J. T. Watkins, San Francisco.
121 *New Plaster Compound for Permanent Surgical Dressing. R. Russ, San Francisco.

112. Owing to the importance of this subject at the present time an abstract of Lloyd's article is reproduced, although it was published in full in the *California State Journal of Medicine*, April, May and June, 1907.

121. This article appeared in THE JOURNAL, Feb. 22, 1908, p. 579.

### Lancet-Clinic, Cincinnati.

*February 22.*

122 *When Should Gastric Ulcer Be Treated Surgically? M. R. Barker, Chicago.
123 Thorough Work in Operating on the Biliary Apparatus. A. C. Wiener, Chicago.
124 *Physicians and Publicity; a Study. E. S. McKee, Cincinnati.

122. Abstracted in THE JOURNAL, Oct. 26, 1907, p. 1467.

124. This article will be dealt with in the Department of Medical Economics.

### Journal of the Kansas Medical Society, Columbus.

*January.*

125 *Success and Failure in Medical Organization. F. G. Carmichael.
126 Three Cases of Tétanus, One Case of Hydrophobia, One Case of Priapism. A. J. Best, Centralia.
127 Dysmenorrhea of Adolescence. P. J. Hendrickson, Columbus.
128 A Few Phases of Leucocytic Activity. B. B. Little, Manhattan.
129 Minor Surgery. R. C. Lowdermilk, Galena.

125. Abstracted in the Department of Medical Economics, THE JOURNAL, Feb. 29, 1908, p. 716.

### Dominion Medical Monthly, Toronto.

*February.*

130 Posterior Occipital Presentations. J. R. McCabe, Strathroy, Ont.
131 The Modified Salicylate Treatment. W. Osenbach, Indianapolis, Ind.

### Colorado Medicine, Denver.

*February.*

132 The Medical Society. C. Epler, Pueblo, Colo.
133 Physicians and Dispensing. J. F. Kearns, La Junta, Colo.
134 Heredity. E. Sturver, Fort Collins, Colo.
135 Case of Acute Melancholia. J. E. Courtney, Denver.

### American Practitioner and News, Louisville.

*February.*

136 Surgical Treatment of Goiter. J. R. Wathen, Louisville.
137 Report of Library Committee of the Jefferson County Medical Society.
138 The Puerperal State. R. H. Ames, Waco, Texas.
139 Therapeutic Hints. N. Bowman, Philan, Texas.

### Mississippi Medical Monthly, Vicksburg.

*February.*

140 When to Operate for Appendicitis. M. O. Shivers, Greenville.
141 Puerperal Convulsions. P. T. Rainey, Cascilla.

### Journal of South Carolina Medical Association, Greenville.

*January.*

142 Value of the County Medical Society. T. G. Croft, Aiken.
143 General Anesthesia. E. W. Simons, Summerville.
144 Alkalometry. R. Ackerman, Walterboro.
145 Gonorrhea. J. Burke, Manitowoc, Wis.

---

## FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

### Lancet, London.

*February 15.*

1 *Ovarian Teratomata. S. G. Shattuck.
2 *Treatment of Tuberculosis by Different Kinds of Tuberculin. N. Raw.
3 *Case of Acute Poliomyelitis Associated with Diplococcal Infection of the Spinal Sac. W. Pasteur, A. G. R. Foulerton and H. MacCormac.
4 Therapeutic Uses of Normal Serum. E. C. Hort.
5 Plastic Bronchitis. S. West.
6 Artificial Air-Way for Use During Anesthetization. F. W. Hewitt.
7 Early Operation in Acute Appendicitis; Indications for Its Performance and Its Advantages. Southam.
8 Cavernous Nevus; Treatment by Metallic Magnesium. J. A. C. Macewen.
9 *Three Cases of Plague Treated by Yersin's Serum. A. C. Dixon.
10 Case of Septicemia Due to Pneumococcus: Death. J. Bell.

1. **Ovarian Teratomata.**—Shattuck describes an embryoma projecting into an ovarian cyst, in which the indications of a second fetus were unusually evident, and a series of ovarian teratomata showing the progressive disappearance of limbs from an amorphous trunk. He discusses the theories that attribute the origin of ovarian dermoids respectively to a relatively abortive and incomplete impregnation and to the impaction of a second individual that has started on its development simultaneously with its host, but has subsequently failed in its progress. He then suggests a theory of his own, that ovarian teratomata result from the fertilization of one of the primordial ova in the ovary of the embryo, so that the embryo gives rise to a second, imperfect individual whose origin is, therefore, not synchronous with, but of later date than, itself—the formation of one embryo within another—for which he suggests the name of "epiembryogenesis." He adduces arguments to show that this theory explains the frequency and particular location of embryomatous cysts of

the ovary, their multiplicity in the same ovary, and their occurrence in both ovaries of the same subject. The patient is, while yet an embryo, the mother of the teratoma. The father of the teratoma is the father of the patient. As regards the occurrence of such cysts in the testicle, this theory involves a hermaphroditic condition of the gland in which the cyst is formed, and the intra-embryonic fertilization of one of the ova. The rarity of the glandular hermaphroditism accords with the rarity of testicular teratoma. On any of the other theories advanced such cysts should be as frequent in the testicle as they are in the ovary.

2. **Tuberculin Treatment of Tuberculosis.**—Summing up his own views on the distribution of tubercle in the human body, Raw says, speaking provisionally and without any final evidence of proof, that (1) tubercle bacilli of the human type produce phthisis pulmonalis, ulceration of the intestines, and tuberculous laryngitis; and (2) tubercle bacilli of the bovine type produce tuberculous peritonitis, tuberculosis of the lymphatic glands, tuberculous joints, meningitis (probably), and lupus. He is of the opinion, also, that acute miliary tuberculosis is of bovine origin. Working on the hypothesis that the human body is attacked by two varieties of tubercle which may be present at the same time, and which, generally speaking, are antagonistic to each other, he has been occupied in trying to produce tuberculins for these different lesions. He concludes that Koch's tuberculin has little or no healing effect in phthisis pulmonalis, as was to be expected on his theory, since that tuberculin is produced from human tuberculosis. For this condition he has prepared a tuberculin from typical bovine tuberculosis (*perlsucht*) cultures, and finds that eighteen patients with pulmonary lesions treated with this bovine tuberculin are making rapid progress, though the time is yet too short to report definitely. On the other hand, he has been using with marvelous effect Koch's tuberculin in 104 cases of surgical, or bovine, tuberculosis. He describes his method of treatment and reports or summarizes his results in phthisis pulmonalis, tuberculous glands, lupus, tuberculous joints, peritonitis, meningitis, abscesses and sinuses. He advocates that the treatment be carried out by practitioners on patients at their own home. With proper precautions, he says, there is no risk.

3. **Acute Poliomyelitis.**—Pasteur, Foulerton and MacCormac report a case of non-fatal acute poliomyelitis, in which they were able to identify in the spinal fluid withdrawn during life, a micrococcus which produced, on injection into a series of rabbits, phenomena resembling the disease in the human subject. The same micro-organism was identified in the spinal fluid of the experimental animal, though they have been unable to obtain the micrococcus on culture in artificial media. They consider Geirsvold's discovery of a specific infectious disease, of which acute poliomyelitis is a frequent and prominent, though not essential, feature, substantiated by their case, which they think represents a sporadic instance of Geirsvold's epidemic disease. There is not sufficient reason for assuming that acute poliomyelitis is always the result of this particular diplococcus infection. The symptoms by which it is recognized in the human are the consequences of a constitutional alteration of certain cells of the central nervous system, which possibly may be caused by the toxins of other infected processes.

9. **Yersin's Serum in Plague.**—Dixon reports three cases treated (two successfully) with Yersin's serum, which seem to show that: 1, Unless the patient has a rigor after the injections he has not had a large enough dose; 2, the doses advised are not nearly large enough for severe cases; and 3, there is no ill effect from large intravenous injections of Yersin's serum.

### British Medical Journal, London.

*February 15.*

11 *Chorea of Aggravated Type with Certain Unusual Phenomena. R. W. Philip.
12 Chronic Bronchitis. A. G. Auld.
13 Surgical Aspects of Subphrenic Abscess. H. L. Barnard.
14 Existence in India of an Acute Tuberculous Fever Which Has Been Confused with Continuous and Remittent Fevers. J. R. Roberts and R. S. P. R. Bhandarkar.
15 Spread and Prevention of Tuberculous Disease in Pondoland, South Africa. J. G. Millar.
16 *Prevention of Tuberculosis; a Suggestion. A. R. Gunn.
17 *Treatment of Epidemic Cerebrospinal Fever by Intraspinal Injections of Flexner and Jobling's Antimeningitis Serum. A. G. Robb.
18 *Calmette's Ocular Reaction for Tuberculosis. F. P. Weber.
19 Phthisis Treated by Bovine Tuberculin. A. Cuffe.

11. **Fatal Chorea.**—Philip reports a case of aggravated chorea, or chorea gravis, in a young man, aged 18. The clinical picture might be described as one of muscular insanity (*folie musculaire*). The motor contortions were universal and most disorderly. The facial muscles gave most contradictory manifestations, from the broad grin of good nature to the ferocious look of uncontrolled anger. Interest, pleasure, excitement, vexation, distress, resentment, hate, were all rapidly reproduced from moment to moment, more quickly than the lightning sketches of the music hall artist. Every possible deviation of the eyeballs occurred, but the most remarkable symptom was one apparently not before noted in connection with chorea, namely, that of hippus—the alternate rapid dilatation and contraction of the pupils. The case is unusual, in that such cases usually occur between five and fifteen years, and when occurring later are mostly in girls. Moreover, no family history of either rheumatism or neuropathy was traceable. Beyond an emotional condition there was no factor of significance in the personal history. Philip discusses the diagnosis of chorea minor, major and gravis, and briefly describes the medieval St. Vitus' dance. He considers the causation, prognosis and treatment of chorea.

16. **Prevention of Tuberculosis.**—Gunn found a suggestion on a fact first pointed out by Archdall Reid, that in every population certain members are to be found who possess an inborn degree of immunity against tuberculosis. Assuming the identity of bovine and human tuberculosis, it is to be expected that among cattle also there will be found certain immune individuals. His proposal, in brief, is to breed from these immune individuals a strain which will remain absolutely free from the disease. He endeavors to show the practicability of this.

17. **Serum Treatment of Cerebrospinal Meningitis.**—Robb gives his experience at Belfast with Flexner and Jobling's antimeningitis serum in the epidemic of cerebrospinal meningitis. Prior to the end of August, 1907, 275 patients were admitted to the fever hospital, 199 of whom died, a case mortality of 72 per cent. Every patient admitted since then has been treated with Flexner and Jobling's serum intraspinally, with the following results: Thirty-two cases with 22 recoveries, 8 deaths and 2 patients still under treatment, of which it is expected that at least one will recover. The results are tabulated. Robb describes the method of injection and the doses, and, while avoiding any premature expression from so small a number of cases, he nevertheless feels justified in putting them on record.

18. **Tuberculin Ocular Reaction.**—Weber refers to the control effects of the ocular tuberculin reaction when sought for in non-tuberculous persons. He suggests that it would be better to test the reaction on apparently healthy persons who have to irritate their eyes by sitting up late reading by artificial light. In five healthy doctors who made this experiment on themselves, a positive result was obtained in each case, and in three it was very violent. He thinks these results worth recording, however exceptional they may turn out to be, as he believes that there has been a tendency unduly to magnify the reaction as a diagnostic test of tuberculosis.

### Clinical Journal, London.

*February 12.*

20 *Colibacilluria. H. B. Shaw.
21 Case of Fatal Acute Illness in a Child from Status Lymphaticus. S. Phillips.
22 Ferments as Intestinal Antiseptics. A. S. Gubb.

20. **Colibacilluria.**—Shaw discusses this subject very exhaustively as regards its origin, the antagonism between harmless and pathogenic bacteria in the human economy, the nomenclature, and the biochemical and toxic characters of the colon bacillus in relation to colibacilluria. He brings forward

evidence to show that infection of the urinary tract, and more especially infection by the colon bacillus, is capable of producing or being associated with the similitudes of malaria, dysentery or mucous colitis, recurrent cystitis of unknown cause, enuresis, pyuria of unexplainable cause, "gout" or "goutiness" or "rheumatism," general tuberculosis or genital tuberculosis, dyspepsia (duodenal ulcer?), acute suppression of urine. Other cases could be quoted in which the symptoms and signs were simulative of different forms of disease, such as typhoid fever and pernicious anemia. The importance of the infection is hardly sufficiently recognized, except when pus is present in quantity. The presence of obstruction to the urinary outflow increases the gravity of the condition. Many persons harbor pathogenic organisms in the urinary tract without displaying any symptoms unless and until the defenses of the body break down. Moreover, the same organisms will produce varying results according to the resisting power of the individual. All causes that lead to imperfect flushing of the urinary tract greatly increase the dangers of infection. Instrumentation is the most common source of their introduction from without. They may, however, reach the urinary tract in the process of their excretion. Any injury to the rectum admits the colon bacillus to the submucous tissue. The first sign is usually a whitish urinary deposit in which the microscope shows pathogenic organisms. The character of the urine is extremely offensive, often apparently ammoniacal, though reaction shows it to be acid. He divides the symptoms into those mainly characterized by fever of apparently unexplained origin, gastrointestinal, and cerebral. The best remedy in cases independent of instrumental interference is to leave them alone unless symptoms call for palliation. When dependent on infection of the bladder alone daily lavage of the bladder with silver nitrate solution, 1 in 1.000 or 2 000, may prove advantageous. The urinary antiseptics and disinfectants he considers disappointing.

### Medical Chronicle, Manchester.

*February.*

23 *Hallucinations. R. G. Rows.
24 *Hyperpiesis as Compensatory of Increased Peripheral Resistance. R. F. V. Hodge.

23. **Hallucinations.**—Rows discusses, in an attractive and easily comprehensible manner, the subject of illusions and hallucinations. With regard to the storage of images in the brain, whether in a special center of representation or in the cells by which they are primarily received, he agrees with those who adopt the latter view. He lays particular stress on the fact that under present conditions the neurologist rarely sees his patients until the hallucinations have become more or less fixed. There is almost always a preliminary period during which such hallucinations are recognizable by the patient as such, and Rows thinks that if it were possible to take these patients in hand in the earliest stages of the illness, it would be possible in many instances to ward off the evil.

24. **Hyperpiesis.**—Hodge discusses, with illustrative cases, the elevation of blood pressure, and arrives at the following conclusions: Hyperpiesis is due to increased peripheral resistance. The possible causes of increased peripheral resistance are (a) arteriolar spasm; (b) changes in the vessel walls; (c) increased viscosity of the blood. Clinically, cases of hyperpiesis may be divided into temporary and persistent. In temporary hyperpiesis the increased resistance is due to arteriolar spasm. It serves no useful purpose, and can not be regarded as being in any way compensatory. With persistent hyperpiesis definite organic lesions of either the arteries or the kidneys are present. In cases of arteriorenal sclerosis a limited reduction of pressure only is obtained by antispasmodic treatment. From this we conclude that there is some other cause of increased resistance present besides spasm of the arterioles. The presence of arteriosclerosis in all cases suggests the probability of vascular changes being the cause sought for. In chronic parenchymatous nephritis the reaction to treatment varies. In one case, when uremic symptoms were present, a limited reduction was obtained. In two cases without uremic symptoms, neither patient showed any reaction to antispasmodic treatment; in one, however, the pressure fell to normal after the relief of edema by incision of the legs. In chronic parenchymatous nephritis, as in arteriorenal sclerosis, spasm of the arterioles can account for at most but a small proportion of the increased pressure. The most important factor in the increased pressure is increased viscosity of the blood. In cases of persistent hyperpiesis we are not able to remove the cause of increased resistance. We must, therefore, have a compensatory increase of blood pressure.

### Journal of Laryngology, Rhinology and Otology, London.

*February.*

25 *Pathology and Therapy of Submucous Inflammation of the Larynx. J. Sendziak.

25. **Submucous Inflammation of the Larynx.**—Sendziak has noted 108 cases of this disorder in 21,000 patients, about 5 per cent. of the whole. He considers this process much more frequent than is commonly observed, and believes that examination of the larynx in every case of peritonsillar abscess would discover a secondary edema of the larynx, and also that acute edema of the subglottic region would be found, if looked for, in many cases of so-called primary laryngeal croup. He divides inflammatory edema of the larynx into: 1. Primary (A) simple—(a) thermal, (b) chemical, (c) mechanical; (B) infectious. 2. Secondary: (a) as a consequence of general infection, (b) primarily, and (c) by extension. He discusses these conditions. Treatment is general and local. The first is chiefly prophylactic; laxative drugs and salicylate preparations with tonics are indicated when the disease is present. He does not consider antistreptococcic serum of much use. He advises ice internally and externally, fluid and cold foods. Vesicants and leeches to the neck may be used to advantage. Incision of the swelling is successful in most cases, though some advocate tracheotomy, others intubation. Bier's method has been applied with success in cases of acute submucous laryngitis or phlegmon of the pharynx and larynx.

### Presse Médicale, Paris.

*February 8, XVI, No. 12, pp. 89-96.*

26 Infantile Splenic Infection with Leishman-Donovan Bodies. Its Relations with Kala-azar and Infantile Splenic Anemia. C. Nicolle and E. Cassuto. (Tunis.)
27 Cancer and the Roentgen Rays. Mally.

### Semaine Médicale, Paris.

*February 5, XXVIII, No. 6, pp. 61-72.*

28 *Cystic Epithelioma of the Ovary. Lejars.
29 *Danish Law in Regard to Destruction of Rats.

*February 12, No. 7, pp. 73-84.*

30 How Long Shall Patients Be Kept in Bed After Laparotomies? (Le traitement ambulatoire des opérés de laparotomie.) R. de Bovis.

28. **Ovarian Cystic Epithelioma.**—Lejars reports two cases with illustrations of the specimens after removal. The possibility of a cystic epithelioma should never be forgotten in examining a patient with an ovarian tumor, even a young woman, free from any general signs of malignant disease. Extensive ablation of such tumors, if still movable and if the peritoneum is not involved, is almost always followed by permanent recovery. In several cases described, the growth did not attract attention until a sudden sharp pain in the epigastrium, radiating through the abdomen, gave the alarm. The pain subsided promptly, but recurred later, growing constantly worse, with greenish vomiting and hiccough, alternating with intervals of peace, the syndrome suggesting appendicitis or a gallstone affection. The patients were between 20 and 40 years old.

29. **Danish Law in Regard to Destruction of Rats.**—This editorial states that the Scandinavian countries take the lead in systematic efforts for the extermination of rats. They regard the rat as a factor in the dissemination of trichina, etc., as well as of plague. Recent research has shown that the flesh or excrements of rats infected with trichina, mixed with food given to pigs, transmitted the trichinosis to the pigs. The island of Deget was free from rats until 1905, when two lads bought on the mainland, from some vagrants, a couple of white rats peculiarly spotted with yellow and black. These

rats escaped and their parti-colored progeny in the course of these two years have invaded the entire island and killed every bird on it. The Danish law is the first that provides for systematic destruction of rats throughout an entire country, with a bounty for each rat caught. The law has been in operation since last July. The text is given in full. At first only the children brought in the rats, but numbers of adults are now engaged in the work and bring in from forty to fifty rats at a time. Arrangements are made in each community for the reception of the rats, generally at the fire engine stations; in small places a tank wagon makes the rounds to receive the dead rats. Severe penalties are imposed for breeding or importing rats and for taking them from one community to another. The rats are trapped generally with some home-made device, such as a heavy door, sheet of metal or the like, with bricks on top, the whole resting on one end, but held up at the other end by a little stick to which a string is tied. The least pull on the stick brings down the heavy door and crushes the trapped rats, while the hunter can superintend several such traps at once. It is said that the number of rats brought in is increasing every week. The bounty on each rat is from 5 to 10 öres—approximately from 1 to 3 cents—and each community is to set aside from its treasury an annual sum for the purpose, amounting to at least 84 cents for each hundred inhabitants. The national treasury also appropriates about $6,000 annually for the purpose, one-third of this sum being devoted to scientific experiments at the agricultural and veterinary schools aiming at destruction of rats, and the balance to be spent for poisons, etc., and to supply such to societies working to exterminate rats. A national society for destruction of rats has been at work for some years in Denmark. Copenhagen is also the seat of the "International Association for the Rational Destruction of Rats." M. Emil Zuschlag, a leading lawyer, is the president of the latter.

## Archiv für Gynäkologie, Berlin.

*LXXXIV, No. 2, pp. 289-538. Last indexed, February 1, p. 407.*

31 *Duration of Gestation and Retrospective Determination of Date of Conception. (Wann tritt die Geburt ein?) F. Schatz.
32 *Ultimate Results of Treatment of Genital and Peritoneal Tuberculosis in the Female. K. Baisch.
33 *Extrauterine Pregnancy. (Extrauterinschwangerschaft.) Y. Iwase.
34 Histology of the Ovarian Vessels at Different Ages with Special Regard to Menstruation and Ovulation Sclerosis. (Histologie der Ovarialgefässe.) M. Sohma.
35 Two Cases of Angioma of the Placenta. R. Schindler.
36 *Thrombosis and Embolism After Gynecologic Operations. E. Zurhelle.
37 Cysts in Retrogressive Corpus Luteum. (Corpus albicanscyste.) F. Koebner.

31. **Duration of Pregnancy.**—Schatz continues his previous studies of this subject, especially the determination beforehand of the date of delivery and retrospective determination of the date of conception. In German medicolegal circles, a range of from 181 to 302 days is allowed, but he thinks that from 260 to 280 days is the normal range, and gives a number of arguments in favor of accepting 273 days as the normal duration of a pregnancy. This is just 39 weeks, 9 calendar months, and 10 menstrual periods (27.3 days), or three-quarters of a year, corresponding also to other periodical features of physiologic life, as he explains.

32. **Ultimate Results of Treatment of Genital and Peritoneal Tuberculosis.**—Baisch reports the ultimate outcome in 110 cases of tuberculous processes in the female genitalia or peritoneum treated at Döderlein's clinic at Tübingen. The mortality was 36 per cent., 40 of the patients having died at once or in the course of the first four years after operative treatment. The others are in good health to date. In 38 cases of tuberculous peritonitis with ascites, 34 of the patients were operated on and 15 are in good health from 4 to 9 years afterward, and 9 after an interval of from 6 months to 3 years. The best results were attained with patients free from fever and without severe tuberculous processes elsewhere, in fair general condition. It is doubtful whether or not internal treatment can show as good a record as two-thirds cured. In 11 cases the ascites was evacuated by an incision in the posterior vagina, but the proportion of patients with fever afterward was much higher than after abdominal section. In 22 cases of tuberculous peritonitis without effusion, 11 patients were treated expectantly; 8 of the 11 patients operated on are in good health years afterward. The operation was merely incision and immediate suture of the abdomen. One patient succumbed to the effects of a fecal fistula resulting from attempts to loosen adhesions. In 2 other cases a fecal fistula dragged along with fever for months, but the patients finally recovered completely. These latter cases demonstrate, he thinks, that these patients recovered not on account of the operation, but in spite of it. In another case the peritoneum was found covered with tubercles, and the intestines were immovably soldered together with the uterus and adnexa. At the sight of these conditions the abdomen was sutured at once without further interference, and the patient, a woman of 33, gradually regained complete health. The abdomen is normal, without tenderness anywhere or signs of trouble, except a small non-sensitive tumor to the right of the uterus. The long bed rest and careful nursing in the clinic may have contributed to the complete recovery as much as the operation. In 45 cases of tuberculous processes in the adnexa, 13 patients were in too advanced stages for operative treatment, and 8 died, but 23 of the 32 patients operated on are in good health after from 2 to 8 years. In 6 cases a tumor has developed again on the tubes, and he urges that these teach that the tendency to healing is exceptionally slight in the tubes, and that they should both be removed as a routine measure in case of a tuberculous process, but he advocates leaving at least one ovary in patients under 30. His experience indicates that the power of conception is entirely lost by tuberculosis of either peritoneum or genitals, and consequently this simplifies the indications for treatment.

33. **Ectopic Pregnancy.**—Iwase reports 38 cases of tubal pregnancy observed at Tokyo, the age of the patients ranging from 24 to 39. His experience seems to show some connection between operations to correct displacements of the uterus and ectopic pregnancy later, and also between miscarriages and extrauterine pregnancy.

36. **Thrombosis and Embolism After Gynecologic Operations.**—Zurhelle writes from Fritsch's clinic at Bonn to emphasize the necessity for greater regard for the natural functions in the after-treatment of gynecologic operations. It should aim not to allow the heart action to grow weak even for a single moment. Nothing should be omitted that can stimulate the heart action directly or indirectly. The patient should not lie on her back for any length of time, and the upper part of the trunk should be raised to allow the lungs to act more freely. Ten or twenty deep breaths should be taken every half hour by the clock; the arms and limbs should be moved frequently, and the intestinal functions started early after the operation. Fluids by the mouth or rectum or subcutaneously reduce the tendency to thrombosis. The more anemic the patient or the weaker the heart, the higher the foot of the bed should be raised. He gives in tabulated form the details of the 34 cases in which thrombosis occurred, fatal in 15 cases. Thrombosis with consequent pulmonary embolism was observed in 19. The percentage was much higher after operations for myoma, being 3.75 per cent. of 372 abdominal and 2.6 per cent. in 154 vaginal myoma operations, with 3.5 per cent. in 57 cancer operations, while it was only 0.7 per cent. in 714 operations on the adnexa and much less than this in the hundreds of other gynecologic operations. Only 40 per cent. of all the women with thrombosis were working women—the necessity for keeping at work does not allow the heart and vessels to get into such a debilitated condition as in the more well-to-do patients, who are able to "take care of themselves" when their health is suffering, and thus get into a condition of defective circulation, defective nourishment of the muscles, relaxation of the walls of the vessels, etc. This vital depression is augmented by worry over the impending operation, while working women have no time for such depressing thoughts. He discusses the effect of the anesthetic on the heart, as also the mechanical effect of pressure on the heart when the pelvis is raised; the

symptoms of thrombosis of the veins in the pelvis and of the femoral and saphenous veins; the necessity for measuring the circumference of the leg on suspicion of thrombosis—the larger diameter of the left leg suggesting thrombosis, as the right leg is usually the larger—extreme weakness and fainting as the patient gets up from bed as a sign of thrombosis; the necessity for refraining from the slightest movement in case of thrombosis, and the indications for stimulating the heart and keeping the bowels moving freely.

**Deutsches Archiv für klinische Medizin, Leipzig.**

*January, XCII, Nos. 3-4, pp. 199-382. Last indexed, Jan. 25, p. 322.*

38 Behavior of Proteolytic Leucocyte Ferment and Its Antiferment in the Normal and Morbid Secretions of the Human Body. (Zweite Mitteilung mit Beiträgen zur Physiologie und Pathologie der Verdauung, insbesondere zur Pankreassekretion.) E. Müller.
39 *Excess of Sugar in Blood During Fever. (Hyperglykämie bei Fieber.) A. Hollinger.
40 Influence of Fatiguing Muscular Labor on the Proportion of Sugar in the Blood. (Einfluss ermüdender Muskelarbeit auf den Blutzuckergehalt.) W. Weiland.
41 *Action of Formaldehyd on Diabetic Urine. (Einwirkung von Formaldehyd auf diabetischen Urin.) L. Michaud.
42 *Chronic Liver Affections with Acquired Syphilis. (Erfahrungen über die chronischen Erkrankungsformen der Leber bei der erworbenen Syphilis.) W. Ebstein.
43 Study of the Pathology of the Pulmonary Circulation. (Untersuchungen über die Atmung bei Herzkrankheiten.) V. Rubow.
44 Clinical Experiences with Intravenous Administration of Strophanthin. F. Lust.
45 Balance of Water in the Blood. (Wasserbilanz des Blutes.) A. Plehn.
46 Distribution of Leucocytes in the Blood. (Verteilung der Leukocyten in der Blutbahn.) Schwenkenbecher and Siegel.
47 *Apparatus for Graphic Registration of the Heart Sounds. (Objektive Aufzeichnung der Schallerscheinungen des Herzens.) E. Roos.
48 Histogenesis of Myeloid Transformation in Leukemia and Anemia. (Ueber die ungranulierten Vorstufen der Myelocyten und ihre Bildung in Milz, Leber und Lymphdrüsen.) E. E. Butterfield.

**39. Excessive Proportion of Sugar in Blood During Fever.**—Hollinger found abnormally large proportions of sugar in the blood in thirteen cases of pneumonia and also in a dozen cases of other febrile affections, the proportion returning to normal as the fever subsided. The increase in the proportion of sugar and the rise in the temperature did not parallel each other, although the highest figures for each coincided in a case of fatal chronic sepsis.

**41. Action of Formaldehyd on Diabetic Urine.**—Michaud relates clinical experiences and tests which show that errors are liable when diabetic urine is treated with formaldehyd to preserve it for examination, especially when it is desired to test for acetone.

**42. Chronic Syphilitic Affections of the Liver.**—Ebstein gives the details of six cases to emphasize the importance of prompt recognition of the underlying infection. In three cases the liver affection subsided under antisyphilitic treatment. In the first, the syphilis acquired at 25 had induced cirrhosis of the liver, the first manifestations being noted three years after infection. Pains radiated from the liver to the right shoulder, and there was much ascites. The patient, a man of 33, had suffered from malaria, with frequent recurrences after the first attack at 23. Under symptomatic measures and potassium iodid he recovered complete health, which has persisted during the nearly twenty years since. The abdomen was tapped eight times in the course of forty-seven days, and Ebstein regards this repeated puncture as an important prophylactic measure against the development of tuberculous peritonitis which is so frequent an accompaniment of cirrhosis of the liver. It was noted in two out of his six cases. The preceding malarial infection may have predisposed the liver to cirrhosis in this case. Another patient, a man of 27, had acquired syphilis three years before. The disease ran its usual course, until pains in the liver region were noticed. The right lobe was enlarged, tender and apparently fluctuating. Under potassium iodid all symptoms vanished and the enlarged lobe grew smaller than normal with a deep depression in it, possibly a cicatrix. The cure has been permanent during seventeen years. The third case was similar; a man of 40 had acquired syphilis fourteen years before, with symptoms on the part of liver and spleen during the last seven years. A cirrhotic fat liver was diagnosed at first, and then, on account of the sensation of fluctuation, a hydatid cyst was assumed, but tentative potassium iodid treatment banished the symptoms. There could not have been actual fluctuation in these cases, but the pseudofluctuation was useful in differentiating the syphilitic character of the affection. It is a somewhat rare symptom and occurs only during certain stages of gumma in the liver—the history of syphilis in the antecedents helped to interpret correctly the tendency to fluctuation in these cases. In two other cases the patients were hard drinkers, and the cirrhosis of the liver was accompanied by heart or kidney disease, soon fatal. In the sixth case a man of 32 had severe jaundice for five months, and succumbed to hemorrhage from a tumor in the liver—actual liver apoplexy, probably the result of syphilitic changes in the blood vessels. The blood from the hemorrhage found its way into the intestines through the biliary passages, causing colic pains. The tumor was probably a gumma, although the patient scouted the idea of venereal infection. Ebstein makes it a practice to give potassium iodid in every case of cirrhosis of the liver, believing that alcoholism and syphilis are frequently associated, and he always examines for syphilitic lesions, especially in the testicles. Specific treatment may not always be needed, but it is better to err on this side.

**47. Graphic Registration of Heart Sounds.**—Roos gives an illustrated description of Marbe's apparatus for recording the heart sounds by means of the movements of a flame connected with a drum covered with a very thin rubber membrane placed on the body. The flame used is from acetylene gas and is very smoky, so that the flame writes its own record on the moving strip of paper by the changes in the appearance of the strip of soot. A second flame serves for time control. Roos gives tracings of the findings in a few of the twenty-three patients tested by this method. The findings correspond with the audible heart sounds, and sometimes record them when the ear is unable to detect them. The tracings also allow the heart sounds to be separated into their various factors and may reveal other features of the heart action which escape other methods of research.

**Deutsche medizinische Wochenschrift, Berlin.**

*February 6, XXXIV, No. 6, pp. 225-264.*

49 Management of Umbilical Cord. (Abnabelung, Nabelverband und Behandlung des Nabelschnurrestes.) F. Ahlfeld.
50 Pyocyanase in Treatment of Diphtheria. R. Mühsam.
51 Atoxyl in Syphilis. B. Spiethoff.
52 *Injection Therapy in Neuralgias. E. Schlesinger.
53 Diverticulum in Ureter and Hydronephrosis. A. Schönwerth.
54 *Suction Treatment of Puerperal Mastitis. (Behandlung der Mastitis mit Saugapparaten.) Zangemeister.
55 *Constriction Hyperemia in Treatment of Burns. (Anwendung der Stauung bei Verbrennungen.) Ritter.

**52. Injection of Chilled Salt Solution in Neuralgia.**—Schlesinger has applied the anesthetic action of extreme cold in treatment of neuralgia by injecting a suitable amount of physiologic salt solution at the desired point after the fluid has been chilled to freezing point—salt solution does not freeze until a little below freezing point. He has thus treated 42 patients with sciatica, making a total of 51 injections. The pain vanishes instantaneously and the cure is generally permanent, although second and third injections were required in a few cases. He injects the fluid at the most painful point, which does not always correspond to the nerve, suggesting that possibly in chronic cases the pain is the result of contracture of the muscles or traction on the periosteum. The effect of the injection is probably mechanical, lifting and loosening the tissues. He describes several acute cases in which the intense pain was relieved at once by a single injection of 10 c.c. of the chilled mixture. In other cases a second or third injection was required. In two of the chronic cases the sciatica had developed in the course of diabetes. The patients have been free from all pain during the months since the single injection. Gouty antecedents were noted in 70 per cent. of all his cases of sciatica, and some of the patients had somatic manifestations of the gouty tendency. He thinks that this suggests the necessity for supervision of the diet in case of sciatica. One patient was a young woman who had suffered for eight months from right supraorbital neuralgia. After intracutaneous injection of 2 c.c. of the chilled salt solution

the pain was banished and has not recurred during the three months since. In a case of intercostal neuralgia, with a suspicion of aneurism in a man of 57, and in one of obstinate coccygodynia in a woman of 49, remissions of the pain for several days were attained with the Schleich technic, using the chilled solution and making about seven blisters. He has also had favorable experiences with the chilled injections in the girdle pains and gastric crises of tabes, but, he says, "that is another story."

**54. Suction Treatment of Mastitis.**—Zangemeister reports his experience with fifty patients with acute mastitis developing within two weeks after childbirth and treated by various measures. In thirty-three cases Bier suction glasses were applied. The results were bad, the suction seeming to increase the tendency to suppuration and lengthen the course of the affection. He, therefore, warns most decidedly against suction technic in the first stage of puerperal mastitis. On the other hand, the effect was most excellent when the affection had progressed to the stage of abscess formation. Very small incisions sufficed then to complete the cure under suction treatment.

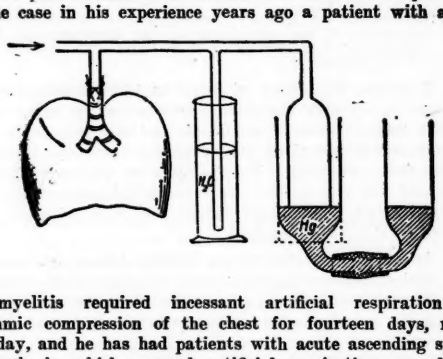
**55. Constriction Hyperemia in Treatment of Burns.**—Ritter confirms the prompt relief of pain and the promotion of healing by application of Bier's constriction hyperemia in treatment of local burns. It is extremely important, however, that the application of the constricting band must be brief. Further experience is necessary before this technic can be recommended for general burns. It may prove harmful. Too long application, even for a small burn, results in scars filled with blood to an excessive extent. The constriction hyperemia relieves the pain in a local burn, as also in case of a frozen member and the most painful form of gangrene. In case of freezing the measure enables the blood to be driven to the anemic frozen part and held there. With a burn the part is not anemic and the indications are different.

### Münchener medizinische Wochenschrift.

*February 4, LV, No. 5, pp. 209-264.*

56 *Artificial Respiration by Mere Ventilation of the Trachea and Apparatus for Automatic Rhythmic Artificial Respiration. (Vorrichtung zur rhytmischen künstlichen Atmung.) F. Volhard (Dortmund).
57 *Diagnostic Cutaneous Reaction After Rubbing with Tuberculin Salve. E. Moro.
58 *Experiments with von Pirquet's Cutaneous Tuberculin Reaction in Adults. F. Junker.
59 *Yeast in Treatment of Vaginal Inflammation. (Hefetherapie bei der Kolpitis.) E. Kehrer.
60 *Yawning. (Das Gähnen.) R. Geigel.
61 Action of Tropacocain Spinal Anesthesia on the Kidneys. (Einwirkung der Tropakokain-Lumbalanästhesie auf die Nieren.) Hartleib.
62 Antitoxin Treatment in Two Cases of Tetanus After Gynecologic Operations. P. Zacharias.
63 Tetanus After Subcutaneous Injection of Gelatin. Use of Gelatin in Case of Hemorrhage. A. Heddaeus.
64 Primary Acute Osteomyelitis of the Ribs. L. Fiedler.
65 *To Aid in the Fight Against Tuberculosis. (Zur Bekämpfung der Tuberkulose.) F. Jessen.
66 *The "Dumb Nurse" Table for Instruments. (Neuer Instrumententisch mit trapezförmiger Platte.) Geissler (Neu-Ruppin).
67 Orthopedics as a Specialty and Its Limitations. O. Vulpius.

**56. Apparatus for Automatic Rhythmic Artificial Respiration by Ventilation of Trachea.**—Volhard found that dogs under the influence of curare to such an extent that respiration was entirely suspended could be kept alive for an hour or so, without any active or passive respiratory movements, merely by passing a current of oxygen into the trachea, allowing it to escape outside of the tube. The tissues absorbed the oxygen with such avidity that the blood remained the normal bright red. Notwithstanding this the animals all died by the end of the second hour; as there was no means of getting rid of the accumulating carbon dioxid, they succumbed to the effects of carbon dioxid poisoning of the vagus center. He has devised an apparatus for automatic rhythmic flushing of the air passages with oxygen and has found it extremely effectual on animals and also in a clinical case, in which the patient was kept alive for nine hours by this means after three hours of manual measures for artificial respiration, normal respiration having stopped during the course of an attempt to remove what proved to be an inoperable brain tumor. The apparatus worked so perfectly in this case for the nine hours before the patient succumbed to his brain trouble that this principle of automatic rhythmic ventilation of the lungs seems destined to prove of invaluable service in tiding patients past dangerous crises. His apparatus consists of a T tube introduced into the trachea, one arm connected with the oxygen tank and the other with a cylinder resting in a jar containing mercury up to a certain height; this jar is connected by a wide rubber tube with a second similar mercury jar. Between the trachea and first mercury jar a water manometer is interposed on the connecting tube. The single or two-way tube introduced into the trachea carries a small inflatable rubber bag to close the passage airtight. Another arrangement has only one mercury jar, but the cylinder resting in this jar fits into a similar but larger cylinder reversed—two lamp chimneys answer the purpose admirably, one larger than the other. The afferent tube has a stopcock or clamp to regulate the supply of oxygen. The weak current of oxygen enters the trachea, ventilates the air passages and passes out through the efferent tube into the cylinder. When the resistance offered by the mercury in the jar is overcome by the pressure from the oxygen, a bubble of air escapes through the mercury. This induces a comparative vacuum and the lung collapses. The inflowing oxygen soon distends the lung again, and so the process goes on at rhythmic intervals. A mere drizzling of oxygen on the trachea seems to be enough to supply the body with sufficient oxygen to keep the blood bright red and thus avert the gravest danger of immediate suffocation from lack of oxygen. It enables time to be gained and avoids the necessity for the painful manual maneuvers for artificial respiration. In one case in his experience years ago a patient with acute




poliomyelitis required incessant artificial respiration by rhythmic compression of the chest for fourteen days, night and day, and he has had patients with acute ascending spinal paralysis in which manual artificial respiration proved the only means of saving them from suffocation. In such cases, and also in apparent death from electric shock, opium poisoning, etc., he thinks that this simple and easily improvised apparatus will much facilitate the task of resuscitation.

**57-58. Differential Cutaneous Reaction to Tuberculin Salve.**—Moro says that the von Pirquet technic is not necessary to induce a differentiating reaction. A specific reaction can be obtained by merely rubbing a tuberculin salve into the skin of the abdomen, just below the manubrium, for one minute or half a minute. The salve is made of equal parts of old tuberculin and lanolin, and keeps for months in a cold place. In case of scrofula, surgical tuberculosis or other forms of tuberculosis, a nodular papulous efflorescence develops in a few hours or within two days on the anointed spot, with or without itching. It subsides in the course of a few days and, even after a severe reaction, no trace is left except a brownish pigmentation by the end of two weeks. This test was applied in eighty-nine cases and proved strictly specific. In every case in which there was a positive reaction other tests also elicited a positive response. The advantages of this "percutaneous" technic, as he calls it, are obvious, chief among them being its absolute harmlessness. Junker reports experiences with the von Pirquet and ocular technics applied in 180 cases. With a single exception every patient with certain tuberculosis gave a positive and every patient manifestly free from tuberculosis a negative response. He mentions that months afterward a subcutaneous injection of tuberculin caused a renewed reactive process in the conjunctiva and at the point of

the cutaneous inoculation, showing that a durable deposit of toxin resulted from the application of the tests.

59. **Yeast in Treatment of Inflammation in the Vagina.**—Kehrer reviews the history of the therapeutic application of yeast, which dates from Hippocrates' day, and relates extensive clinical experience with it in his own practice. The best results were attained in acute gonorrheal inflammation, benefit being apparent in three or four days. In the chronic form, if no improvement is apparent in three or four days, he resorts to other measures. He prefers preparations of yeast which contain no living yeast cells, as their by-effects can not always be anticipated, and he warns against applying the yeast to the cervix or uterus—the application should be restricted to the vagina alone. When used in acute vaginal gonorrhea it is a prophylactic against ascending infection, but in case of existing chronic suppurative endometritis it is important to apply suitable intrauterine medication, rinsing and cauterization, to protect the vagina against constant reinfection from above.

60. **Yawning in Respect to Prognosis.**—Geigel has noticed that yawning is generally a sign of comfort and relaxation; it does not accompany excessive but only moderate fatigue. A very sick person does not yawn; when he yawns the crisis is past and he has started on the road to convalescence.

65. **The Campaign Against Tuberculosis.**—Jessen urges that postgraduate courses should be held everywhere to train physicians to recognize tuberculosis in its incipiency, before it has done irreparable havoc. He also advocates compulsory declaration of every case of tuberculosis and compulsory disinfection every time tuberculous individuals change their residence. The public should be trained to regard with respect the individual cuspidor using cougher, and to dread those who cough without taking such precautions. There should be no shrinking from labeling tuberculosis with its proper name while preaching its curability.

66. **Handy Table for Instruments.**—Geissler's table is a single standard supporting a trapeze-shaped frame over which a washable cover is slipped. The frame projects considerably from the standard, and this allows it to project over the patient, ready to the operator's hand. The standard can be placed at the foot of the table, between the patient's legs, the table thus projecting over the patient, close to the field of operation, and yet entirely out of the way of the surgeon's or assistants' arms. He calls it the "dumb nurse."

## Wiener klinische Wochenschrift.

*January 30, XXI, No. 5, pp. 137-172.*

68 *Relations Between the Mammæ and the Genitalia. A. Foges.
69 Mastoid Operation by Way of the Nose. (Radikaloperation der Kieferhöhleneiterungen von der Nase her.) L. Rethi.
70 The Differentiating Cutaneous Tuberculin Reaction. A. Wolff-Eisner.
71 The Rôle of the Lipoids in the Specific Reaction to Syphilis. E. Weil and H. Braun.

*February 6, No. 6, pp. 173-212.*

72 *Differential Tuberculin Reactions. L. Detre.
73 Examination of 800 Patients in Regard to Palpation Findings and Tender Points in Relation to the Appendix and Cecum. (Palpation des Wurmfortsatzes, des Blinddarmes und der zugehörigen Druckpünkte.) W. Jaworski and S. Lapinski.
74 Retroperitoneal Cystic Tumor. H. Heyrovsky.
75 Abortive Treatment of Gonorrhea with Silver Salts. R. Polland.
76 False Tumor of the Stomach. Konried.

68. **Relations Between Mammæ and Genitals.**—Foges' conclusions from the experimental research reported are to the effect that the ovary, by its internal secretion, is indispensable for the development of the mamma to a functionally capable organ. In regard to the milk-producing function, however, the subsidence of the ovarian function is what starts and increases the production of milk. He refers parenthetically to a patient, a man of 45, who applied to have very prominent breasts removed. They had grown to a large size after subsidence of a syphilitic epididymitis with subsequent atrophy of the testicles. Amputation showed that both mammæ were composed exclusively of adipose tissue, without a trace of gland substance.

72. **Human and Bovine Differential Tuberculin Reactions.**—Detre is chief of the tuberculosis department of the polyclinic at Budapest, and here reports extensive research on the cutaneous reaction to inoculation with tuberculin or filtrates of cultures of human and bovine tubercle bacilli. In some cases the human tuberculin was inoculated in one arm and the bovine in the other, or the inoculations were made in a row on the same limb, first the tuberculin and then the human and bovine filtrates, and then inoculation with a carbolic acid solution. The results with two parallel rows always coincided in every respect. He gives illustrations of two arms thus treated, showing the invariable specific reaction to the human or bovine filtrate and the absence of reaction to one or the other according as the infection was of human or bovine origin. He calls this the "differentiating reaction" and tabulates the classified findings in 110 cases. In 69 per cent. the reaction occurred only with the human inoculations and in 9 per cent. only with the bovine, while in 22 per cent. there was evidently mixed infection. The human reaction occurred less frequently in the surgical cases (59 per cent.) and most frequently with infected glands in the neck (82 per cent.). On the other hand, in the surgical cases the proportion of mixed infections was 33 per cent. and of bovine alone 8 per cent., the total 41 per cent. being a much larger proportion in these than in the lung and gland cases. He calls attention to this preponderance of the bovine reaction in the surgical cases, thinking that it suggests infection by way of the blood from the alimentary tract. He found filtrates of bouillon cultures of the tubercle bacilli more effectual and reliable than tuberculin for the tests, and he also noted that the clinical character of the tuberculous affection imposed a special type on the reaction, acute, chronic, rudimentary or negative.

## Zentralblatt für Chirurgie, Leipzig.

*January 25, XXXV, No. 4, pp. 89-120.*

77 *Disinfection of the Hands. R. Lenzmann.
78 *Operation for Embolism of Pulmonary Arteries. F. Trendelenburg.
79 Intestinal Button Made from Formalin Compound of Casein-Galalith. (Neuer Darmknopf.) V. Lieblein.

*February 1, No. 5, pp. 121-152.*

80 *Influence of Application of Heat and Cold in Infection of the Peritoneum. W. Danielsen.
81 Sterilization of Metal Instruments. J. Leval.
82 *Aspiration Treatment of Cancerous Tumors and Especially of Epithelioma of the Face. (Behandlung von krebsigen Geschwüren.) W. Sykoff.

*February 8, No. 6, pp. 153-184.*

83 *Growth of Epithelium Under Influence of Scarlet R. (Epithelwachstum unter Einwirkung von Scharlach R.) V. Schmieden.
84 Aneurismal Varix in Jugular Vein. (Varix aneurysmaticus.) Herbing.

77. **Disinfection of the Hands.**—Lenzmann comments on the inconveniences of wearing gloves, the slipperiness that follows the use of any substance like soluble rubber or a varnish, and the inability of the disinfectants at present in vogue to penetrate into the sweat and sebaceous glands of the skin to destroy germs lurking there which may be forced out by the use of the hands during the operation. For these reasons he has devised a technic which has proved eminently satisfactory during several years of experience. He uses a soap made of 5 parts formalin to 15 parts benzin and 80 parts of a soapy vehicle composed of 50 per cent. cod liver oil with fat, lanolin, glycerin, Peruvian balsam and ethereal oils. This foams in contact with the skin and works its way into the glands, as he has demonstrated by coloring the mixture with fuchsin. He first scrubs his hands under running hot water with "marble soap" for five minutes, then dries them with gauze, and rubs in the soapy mixture for two minutes, then scrubs with spirit of soap for two minutes and rinses off finally with 1 to 1,000 solution of bichlorid of mercury. He prepares the field for operation in the same way, rubbing the soapy mass into the skin for five minutes the evening before, after the usual soda and soap scrubbing, and then covers with a moist medicated compress, changing it for a compress impregnated with the bichlorid solution two hours before the operation, finally rubbing off with the spirit of soap and rinsing with the bichlorid. The disinfectant works its way deep into the skin while it does not irritate or injure it in any way.

78. **Operation for Embolism in Pulmonary Arteries.**—Trendelenburg reports successful experiments on animals and on the cadaver showing the practicability of operating in case of embolism of the pulmonary arteries. He succeeded in removing by the technic described a strip of lung 15 cm. long and 1 cm. thick, which had been taken from a calf and passed through the jugular vein into the left branch of the pulmonary artery of another calf. The animal rapidly recovered after removal of this artificial embolus. Over-pressure in the air cabinet is not indispensable for the intervention.

80. **Influencing of Infection in Peritoneum by Application of Heat and Cold.**—Danielsen thinks that when the infection is very virulent the physician should strive to prevent absorption, and this is best accomplished by application of cold. On the other hand, when the germs are not very virulent, the protecting and defensive vital processes are best promoted by hastening absorption of the comparatively non-virulent germs. For this application of heat is most effectual. By discriminating in this way he believes that he has been instrumental in hastening the recovery of many patients with peritonitis. Gelinsky recently advocated application of superheated air in treatment of peritonitis, and Danielsen cordially endorses his suggestion for cases of mild infection, but warns most decidedly against it in case of very virulent germs.

82. **Suction Treatment of Cancers and Suppurative Processes.**—Sykoff thinks that it is important to prevent absorption of the products of a cancer and consequently advocates "aspirating" them; he uses Potain's apparatus with Körting's air pump. This method of treatment is applied for ten or fifteen minutes as often as is necessary, in some cases every day. The end of the rubber tube which is placed in contact with the ulcer is smeared with a turpentine ointment in order to make perfect contact. It is placed directly over the ulcer and the tube is then exhausted of air, this procedure being continued for ten or fifteen minutes. The tube is then found to be filled with blood clots, pus and epithelial débris. The ulcer presents an excavated appearance instead of the "heaped up" appearance usual in these cases. Generally, healing takes place after ten treatments, the malignant ulcer being slowly converted into a simple ulcer and then into scar tissue. Sykoff has also employed this method in suppurative arthritis, suppurative disease of the uterus and adnexa, inoperable carcinoma of the uterus, and epitheliomas of the face. The best results have been obtained in the last. He reports an illustrative case.

83. **Growth of Epithelium Under Action of Scarlet R.**—In the issue for Nov. 10, 1906, page 1566, THE JOURNAL commented editorially on Fischer's success in inducing production of atypical epithelium by the injection of a concentrated oily solution of the dye, scarlet R, injected under the skin of rabbit's ears. Vigorous proliferation of epithelium followed the injected substance into the depths, producing microscopic pictures not to be distinguished from those of ordinary cutaneous cancer. No destructive growth was apparent; the proliferation ceased as soon as the injections were suspended, and the new-formed epithelium succumbed to degenerative processes. Schmieden has been utilizing this property of scarlet R to promote the healing of large skin defects. An extremely thick and vigorous epithelium grows rapidly over the defects under the influence of an 8 per cent. scarlet R salve. The epithelium thus grown seems to be normal in every respect. Among the patients thus treated was a woman with large skin defects on arm and breast resulting from a burn. Small islands of epithelium were scattered over the surface of the defects, and under the salve broad rings of epithelium rapidly grew around each of these islands, rendering the proposed transplantation unnecessary. The epithelium thus grown seems so thick and strong that it promises to shrivel less than under other conditions. The defect left after removal of the mamma in another case rapidly healed under the salve, although previous attempts at transplantation had been unsuccessful. He warns that the salve has an evident irritating action; the granulations turn gray and sometimes suppurate; consequently he never applies the salve for longer than twenty-four hours at first, following with plain lanolin or oil for two or three days or longer, until the signs of irritation have passed away. He says further that it is important not to apply the salve until the surface is ready for it; that is, presenting clean flat granulations, the conditions similar to those required for Thiersch flaps. He does not think there is any danger of a tendency to cancer in this proliferation of the epithelium, as neither Fischer nor others who have tried the scarlet R have witnessed anything approximating malignant proliferation. The effect is evidently a chemotactic action, specific for epithelial cells.

## Zentralblatt für Gynäkologie, Leipzig.

*January 25, XXXII, No. 4, pp. 97-120.*

85 Instrument for Discission of Rigid Os Uteri. (Geburtahilfliche Instrumente.) M. Stolz.
86 Obstetric Curettes. Id.
87 Improved Intrauterine Catheter. Id.
88 Obstetric Speculum. Id.

*February 1, No. 5, pp. 121-168.*

89 Study of the Ciliated Epithelium of the Female Genitalia. (Flimmerung im Gebiete des weiblichen Genitalapparates.) O. Hoehne.
90 *Functional Fate of Relics of Ovaries. P. Zacharias.
91 *Extraperitoneal Incision of Uterus. H. Sellheim.
92 Suprarenal Treatment of Osteomalacia. (Adrenalinbehandlung der Osteomalakie nach Bossi.) F. Engelmann.
93 My First 28 Cases of Successful Influencing of Menstrual Disturbances by Roentgen Treatment of Ovaries. (Beeinflussung von Periodenbeschwerden durch Röntgenstrahlen.) M. Fraenkel.
94 Transplantation of Ovaries into the Testicles of Rabbits. (Beitrag zur Ovarientransplantation.) G. Burckhard.
95 Combined Hook and Knife for Cutting Ligatures. (Häkchenmesser.) J. Wernitz.

*February 8, No. 6, pp. 169-200.*

96 *Necessity and Suggestions for Uniformity in Collecting Cancer statistics. (Karzinomstatistik.) G. Winter.
97 Outcome of More Extensive Abdominal Operations for Uterine Cancer. (Leistungen der erweiterten abdominalen Uteruskrebsoperation.) E. Wertheim.
98 Pyocyanase in Gonorrhea in the Female. J. Hofbauer.
99 Ventrofixation of Uterus by Means of Round Ligaments. C. Staude.
100 Automatic Retractor for Abdominal Walls. (Selbsthaltender Bauchdeckenécarteur.) J. von Rosenthal.

90. **Functional Fate of Remains of Ovaries.**—Zacharias reports the later history of three patients on whom he operated several years ago, leaving a small piece of the ovarian tissue when removing both ovaries for a non-malignant affection. The piece left had to be part of the benign tumor. Menstruation had continued undisturbed.

91. **Extraperitoneal Incision of Uterus.**—Sellheim reports his experiences with what he calls "supravaginal Cesarean section." He would like to have this extraperitoneal supravaginal technic supplant the abdominal or vaginal technic for Cesarean section and pubiotomy, as it allows the child to be extracted approximately by the natural route with the loss of scarcely a drop of blood, under conditions favorable for surgical work. During the period of expulsion the entire cervix lies in the pelvic connective tissue, bare of peritoneum, and this region has the smallest proportion of blood vessels. The longer labor has lasted and the more contracted the pelvis, the better the conditions for this extraperitoneal operation. The peritoneum has to be detached from the top of the bladder, but this does not affect the bladder functioning. The longitudinal incision in the cervix can be readily enlarged at need. He describes two cases in which this technic was successfully applied.

96. **Plea for Uniformity in Cancer Statistics.**—Winter has taken a prominent part in collating cancer statistics and in prophylaxis of uterine cancer; he here expatiates on the urgent necessity for compiling statistics according to a uniform plan so that they can be compared, believing that important lessons will be learned from the findings. He appeals to gynecologists the world over to write to him expressing their acquiescence in the outline he proposes for collection of statistics or to suggest modifications and improvements. All such replies received before April 1 he will collate and publish, giving names, to add weight to the material. He aims thus to work out a practicable and universally acceptable method for collecting cancer statistics which will conclusively demonstrate the superiority of certain operative technics and decide other still disputed questions. He suggests the following five points: 1. Primary results of operation—mortality percent-

age, obtained by listing all the fatalities during or after the operation which would not have occurred without it, such as sepsis, embolism, pneumonia, pyelitis and cardiac paralysis. 2. Operability. A case is to be regarded as operable when a radical operation can be carried out to the end. This term "operable" should not be definitely applied to the case until after the operation, because the opening of the abdomen first reveals the true condition of affairs. He classes further the radical intervention as (a) removal of uterus and adnexa; (b) removal of upper portion of vagina; (c) removal of parametrium on both sides, and (d) removal of the lymph glands of the first stage pertaining to the uterine system. 3. Permanent results, based on five years of freedom from recurrence. Scarcely 10 cases of recurrence after the fifth year are on record in 1,000 cases of recurrence, while from 3 to 5 per cent. of recurrences, in the experience of Winter, Glockner, Thumim and Hanisch, occurred in the fourth and fifth years. 4. Computation of the permanent results. These are calculated for a given radical operation after excluding all cases in which the patients succumbed during or soon after the operation, or from any cause, during the five years following the operation or were lost track of. 5. The absolute number of cures. This figure is calculated from the number of inoperable cases, the number of deaths during the operation, and the number of cases of recurrence. The number of patients cured by the operation, taken alone, does not give an accurate conception of the value of the operation, and other reasons are cited why the most instructive formula for the absolute number of recoveries is that based on the percentage of patients with cancer who apply for relief who are made permanently healthy by the operation, in that they survive the operation and escape recurrence later. From this calculation are omitted (a) all patients who refuse the operation; (b) all patients who have been lost track of; (c) all patients who have died of intercurrent diseases before the end of the five-year interval. These classes of patients must be excluded from the formula computed for the ultimate outcome, as they interfere with a correct estimation of the results of the operation, as he explains in detail. The figures must be given: 1, of the number of cancer patients who sought the surgeon's aid before the beginning of the five-year period; 2, the number of those who refused operation; 3, the number of those found inoperable; 4, the number of those who died from the operation; 5, the number of carcinomas over which control could be exercised; 6, the number of patients who have been lost to sight; 7, the number of those who died from an intercurrent disease or other cause during the five-year interval, and 8, the number of patients found to have recurrence before the end of the five years.

He gives the following as an example of the calculations: In January, 1908, a general outlook over the status of cancer in a given clinic is undertaken. All the cases of cancer admitted to the clinic before 1903 would thus come under consideration —a total of 200. Of these 200 patients (a) refused operation, 5; (b) succumbed to the operation, 10; (c) lost sight of, 5; (d) died without autopsy during the five years since, 5; (e) recurrence, 50. From the total 200 would thus have to be subtracted (a) with 5; (c) with 5, and (d) with 5, leaving 185 for computation of the absolute recoveries. Of these, 10 succumbed to the operation, 50 have had a recurrence of the cancer, and the cancer was inoperable when first seen in 90 cases. Thus, out of the 185 cases, 35 patients were restored to permanent health by the operation. The absolute cures (*absolute Heilungszahl*) are thus 19 per cent. of 185. He appeals to gynecologists generally to cooperate with him in the way he suggests, as cancer and the operations for it form one of the few subjects in which statistics are of paramount importance, and vitally precious time is now being wasted. Address Prof. G. Winter, Königsberg, Germany.

### Gazzetta degli Ospedali, Milan.

*January 26, XXIX, No. 11, pp. 105-120.*

101 *Acute Anilin Poisoning. (Anilismo.) C. Trevisanello.
102 Ovarian Organotherapy. C. Ottone.
103 Elimination of Urea in Chronic Affections. G. Campanella.
104 Application of Forceps at the Superior Strait. (Forcipe allo stretto superiore.) E. Bracchi.
105 Steam or Compressed Air Apparatus for Spraying. (Nuovo nebulizzatore.) C. Giglio.
106 Efficiency of Small Amount of Amyl Nitrite Inhaled Early in Tuberculous Hemoptysis. (Il nitrito di amile nelle emottisi tubercolari.) L. Fochi.

**101. Acute Anilin Poisoning.**—A workman in a dye house fell into a tank containing anilin oil. He was rescued immediately and taken to the hospital, unconscious and cold, with marked cyanosis and almost complete apnea, Cheyne-Stokes respiration, subnormal temperature, and pulse 112; the skin was dyed an intense blue. He was given hot baths, with cutaneous revulsion, injections of ether, caffein and camphorated oil, inhalation of oxygen and digitalis, with venesection and saline infusion. By evening the patient was out of immediate danger and continued to improve on a milk diet, with 10 gm. of sodium sulphate a day, until discharged from the hospital on the ninth day. The urine and stools showed the effect of the anilin, both being the color of dark coffee for a few days, while the blood showed the spectrum of methemoglobin. The sodium sulphate was given in the hope of combining the anilin in the organism as a paramidophenol.

### Policlinico, Rome.

*January, XV, Surgical Section, No. 1, pp. 1-48.*

107 *Experimental Research on Ligation of the Large Veins of the Trunk. (Sulla legatura delle grandi vene del corpo.) N. Leotta.

*February 2, Practical Section, No. 5, pp. 133-164.*

108 Hypertrophic Sclerosis of Liver Due to Uric Acid in the Blood. (Sulla sclerosi ipertrofica del fegato da origine uricemica.) G. Baccelli.
109 Syndrome of Whooping Cough Simulated by Presence of Foreign Body in Trachea. E. Cavazza.

*February 9, Practical Section, No. 6, pp. 165-196.*

110 Causes of Graver Course of Diphtheria in Case of Recurrence. Cause del decorso più grave della difterite nelle ricadute.) L. M. Spolverini. Commenced in No. 5.

**107. Experimental Ligation of Large Veins of Trunk.**—Leotta did not find the effects of ligation of the vena cava, innominata and other veins so serious as he had anticipated. He gives the details of thirty-four series of experiments on dogs or guinea-pigs, with the ultimate results and mechanism of the collateral circulation.

### Hygiea, Stockholm.

*January, LXX, No. 1, pp. 1-96.*

112 *Contagiousness of Syphilis. (Syfilis smittsamhet.) M. Möller.
113 *Professional Secrecy and Duty or Right of Search for the Source of Infection in Venereal Affections. (Om läkarens tystlåtenhetsplikt, om anmälningsplikt resp. anmälningsrätt samt om utrönande af smittokällan vid smittosamma könssjukdomar.) Id.
114 Therapeutic Utilization of Electric Counter Currents in the Human Body. (Elektriska motströmmar i människokroppen.) G. Hellman.
115 Transportable Mercury Manometer. (Kvicksilfermanometer.) K. A. E. Fries.

**112-113. Contagiousness of Syphilis.**—Möller makes a point of investigating the source of the infection in every case of syphilis, whenever possible, and has found this a great aid in general prophylaxis of venereal disease; when the source is discovered and the syphilis treated, further infection of others is less liable. His experience with 60 cases in which he has obtained such data (22 men and 38 women) has shown that, as a rule, the infecting party is not aware of his contagiousness, and that infection was transmitted frequently by an unnoticed primary affection or by secondary genital manifestations—the latter more frequently in the female—by secondary extragenital manifestations, and occasionally during the so-called latent period when no appreciable manifestations could be detected. He regards this latter class of cases as particularly dangerous from the standpoint of prophylaxis. His experience demonstrates that other local genital affections may predispose to syphilitic infection, especially herpes, condyloma, scabies, and relics of infiltrations or anything which induces a predisposition to defects in the skin. He insists that every person who has been infected with syphilis must be regarded as contagious during the first years afterward, at least, whether they present appreciable symptoms or not. Thorough local and general treatment is the best measure for general prophylaxis, but personal attention—individual prophylaxis—is extremely important, but it requires more widespread knowledge of the subject among all classes. In his

second article on a different aspect of the same subject he tabulates the information he has learned from various patients in regard to the source and circumstances of the opportunity for contagion in a total of 661 cases. He discusses the physician's duty in regard to professional secrecy and notification of known sources of infection. In Denmark and Norway the physician is required to declare cases of syphilis known to be a source of infection, but the law does not require this in Sweden. He thinks that the Swedish law should be modified to require that the physician should declare the sources of infection when the manner of life or other conditions render contagion of others probable; also that the physician should keep a record of each case of venereal disease with the details learned in regard to the source of infection, omitting the patient's name. His investigation at Stockholm confirms anew the predominant part played in the dissemination of venereal diseases by abuse of alcohol, street solicitation and so-called hotels.

### Norsk Magazin for Lægevidenskaben, Christiania.

*February, LXIX, No. 2, pp. 97-180.*

116 Norwegian Artificial Mineral Waters. (Kunstige norske mineralvande.) E. Poulsson and E. Wang.
117 *The Biochemical Reaction in Diagnosis of Malignant Tumors. (Biochemiske reaktioners diagnostike anvendelse paa de maligne svulster.) S. Widerøe.
118 *Application of Biochemical Reaction in Diagnosis. (En biochemisk reaktion i diagnostik øjemed.) M. Paus.
119 Treatment and After-treatment of Fractured Joints. (Frakturer i led.) Bülow-Hansen.

**117-118. Biologic Blood Test for Diagnosis of Incipient Cancer.**—Widerøe thinks that Kelling's theory in regard to the origin of cancer from embryonal cells of other species is scarcely probable, but Kelling's assertions in regard to the application of the hemolytic blood test for diagnosis of cancer have been brilliantly confirmed by Widerøe's experiences. Kelling regards the application of this test as proving his embryonal cell theory. Widerøe applied the test in 50 cases and exclusively with hen's blood; 25 of the patients had cancer and 25 suffered from other affections. In 25 cancer patients the results of the test were positive in 64 per cent., the degree of hemolysis averaging from 50 to 85 per cent. In the 16 cases in which the hemolysis was over 30 per cent. the cancer was in the digestive tract in 13. In the 9 cases with negative results in the cancer group, 6 of the patients were cachectic, and Kelling has warned that the reaction diminishes with advancing debility. Among the 25 patients with other affections, the hemolysis surpassed 30 per cent. only in 3 cases, and in 2 of these the affection was a blood disease (splenic or pernicious anemia) which Kelling declares belongs in the same category with malignant tumors. The third patient had pneumonia. In the others the hemolysis was less than 8 per cent. in 13 of the patients, and less than 16 per cent. in 6 others. No appreciable hemolysis could be detected in the patients with syphilis and benign tumors. Widerøe remarks that these findings confirm in every respect Kelling's assertions as to facts, and they do not seem to conflict with his theory. He discusses the chemical composition of the hemolytically active substance which these tests show is a constituent of the serum in case of malignant disease.

Paus relates similar research in 90 cases, including 30 healthy persons. He centrifugates with Hamburger's hemolysis graduated glass and states that 2 c.c. of the patient's blood are ample for the purpose. He obtained a positive reaction in 65 per cent. of the cases in which the course of the affection or operation confirmed the diagnosis of cancer. With the exception of uremic conditions, his results harmonized with those of Kelling in every respect. The latter has announced that the hemolytic action of the serum may remain constant in case of carcinoma or sarcoma to the patient's death, but vanishes when the tumor is successfully removed. He also states that if cancer substance is injected into an animal, the sérum of the animal acquires a hemolytic action to the same level as in the patient from whom the cancer substance was derived. Metastases induce hemolysis the same as the primary tumor. The hemolytic action is more pronounced the more vigorous the patient and occurs with less and less energy with increasing cachexia. Paus' research confirmed these assertions.

## Books Received

**Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.**

TEXT-BOOK OF PHYSIOLOGIC CHEMISTRY. By Olof Hammarsten, late Professor of Medical and Physiologic Chemistry in the University of Upsala. Authorized Translation from the author's enlarged and revised sixth German edition by John A. Mandel, Sc.D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. Cloth. Pp. 845. Price, $4.00. New York: John Wiley & Sons, 1908.

THE THEORY AND PRACTICE OF ANTIRABIC IMMUNISATION. By Captain W. F. Harvey, M.B., I.M.S., and Captain Anderson McKendrick, M.B., I.M.S., No. 30 of the Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Paper. Pp. 43. Price 1s. 2d. Calcutta: Superintendent of Government Printing, India, 1907.

PIROPLASMA CANIS AND ITS LIFE CYCLE IN THE TICK. By Captain S. R. Christophers, M.B., I.M.S., No. 29 of the Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Paper. Pp. 83. Price 3s. Calcutta: Office of the Superintendent of Government Printing, India, 1907.

TEXT-BOOK OF OTOLOGY. By Fr. Bezold, M.D., Professor of Otology at the University of Munich and Fr. Siebenmann, M.D., Professor of Otology at the University of Basle. Translated by J. Holinger, M.D., Chicago. Cloth. Pp. 315. Price, $3.50. Chicago: E. H. Colegrove Co., 1908.

ANNUAL REPORT of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States, for the Fiscal Year 1907. Cloth. Pp. 146. Washington: Government Printing Office, 1908.

THE ANIMAL MIND. By Margaret Floy Washburn, Ph.D., Associate Professor of Philosophy in Vassar College. Cloth. Pp. 333. Price $1.60. New York: The Macmillan Co., 1908.

MILK AND ITS RELATION TO THE PUBLIC HEALTH. By various authors. Hygienic Laboratory—Bulletin No. 41. Paper. Pp. 758. Washington: Government Printing Office, 1908.

REPORT of the Commissioner on Education for the Year Ending June 30, 1906. Vol. II. Cloth. Pp. 1308. Washington: Government Printing Office, 1908.

TRANSACTIONS of the Luzerne County (Pa.) Medical Society for the Year Ending 1907, Vol. XV. Paper. Pp. 118. Wilkes-Barre: E. B. Yordy Co., 1907.

## NEW PATENTS.

Recent patents of interest to physicians:

877401. Deodorizing compound. S. M. Buchanan, Hubbard, Ore.
877309. Deodorizer-receptacle. R. R. Emerson, Jackson, Mich.
877317. Auriphone. D. O. Fosgate, Chicago.
877231. Crutch-tip. C. P. Rogers, Jr., Corry, Pa.
877248. Making stannic chlorid. E. A. Sperry, Brooklyn.
877154. Electrical abdominal heater. H. D. Wood, Jr., Minneapolis.
877155. Electrical face-steamer. H. D. Wood, Jr., Minneapolis.
877703. Sterilizing foods or organic compounds. C. C. L. G. Budde, Copenhagen, Denmark.
877560. Shoulder brace. G. T. Foltz, Wytheville, Va.
877660. Making vegetable extracts. J. Meikle, Glasgow, Scotland.
877618. Douche protector. A. A. Van Orden, Galilee, Pa.
878045. Invalid or hoisting bed. J. J. Collins, Clemo, Pa.
878191. Rectal supporter. H. E. Cunningham, Los Angeles, Cal.
878199. Vein tube. W. H. Freeman, Freehold, N. J.
878379. Soda-water fountain. L. G. Green, Philadelphia.
877926. Vaginal syringe. E. Hiker, Chicago.
878296. Vaporizer for medicaments. E. L. Loveless, Corning, N. Y.
878078. Vibratory massage apparatus. G. R. Macomber, New York.
878223. Inhaler. A. F. Meisselbach, Newark, N. J.
878225. Pasteurizer. J. C. Miller, Canton, Ohio.
878083. Vibrator. W. N. and F. W. Nicholls, Toronto, Canada.
877946. Apparatus for containing and injecting serums and other substances. J. L. Overton, London, England.
39054. Design, Atomizer. C. W. Meinecke, Jersey City, N. J.
879041. Massage apparatus. C. E. Egan, Petersburg, Ill.
878524. Surgeon's knife. R. K. Gregory, Greensboro, N. C.
878577. Device for repairing fractured jaws. P. Stukey, Auburn, Ind.
878917. Endoscope or other optical instrument. R. H. Wappler, New York.
878760. Apparatus for massaging the hearing organs. A. Zund, Paris, France.
879360. Artificial hand. C. M. Broady, South Bend, Ind.
879516. Hot water bottle. T. Cantwell, St. Louis.
879442. Chair-bed, couch, stretcher, etc. H. P. Clemetson, Ashford, England.
879740. Poison indicator. G. Cohen, Jamestown, N. Y.
879619. Bath-pad. J. H. Foote, Chicago.
879179. Specialist's chair. W. H. Kersey, Indianapolis.
879777. Electromedical appliance. S. H. Lackland, St. Louis.
879778. Catamenial bandage. W. Lauffs, Zurich, Switzerland.
879391. Fresh-air-treatment apparatus. L. P. Leonard, St. Cloud, Minn.
879297. Uterine curette. F. T. M. Moormeister, La Grande, Ore.
879567. Truss. H. L. Mortimer, Sound Beach, Conn.
879299. Syringe. W. B. Murphy, New York.
879191. Hair tonic. F. J. Pieper, Salt Lake City, Utah.
879326. Process of and apparatus for preparing effervescing baths. L. Sarason, Hirschgarten, near Berlin, Germany.
879223. Cutting and stripping device for spool adhesive plasters. W. J. Walsh, Boston.
879224. Cystoscope. R. H. Wappler, New York.